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WIDE FLANGE—C B SECTIONS

A. S. T. M. A-7-42 Specifications

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				Width, Inches	Thickness, Inches		
CBJ 6...	8½	.20	5.830	3.940	.194	.170	5–65
CBJ 8...	10	.20	7.900	3.940	.204	.170	5–65
CBJ 10...	11½	.20	9.870	3.950	.204	.180	5–65
CBJ 12...	14	.20	11.910	3.970	.224	.200	5–65
CBS 6...	15½	.15	6.000	6.000	.269	.240	5–65
	*18	.15	6.110	6.010	.322	.250	Chgo.
	20	.10	6.200	6.018	.367	.258	5–65
	*22½	.10	6.280	6.050	.411	.290	Chgo.
	25	.10	6.370	6.080	.456	.320	5–65
	*27½	.10	6.460	6.112	.500	.352	Chgo.
CBL 6...	12	.15	6.000	4.000	.279	.230	5–65
	16	.15	6.250	4.030	.404	.260	5–65
CBL 8...	13	.15	8.000	4.000	.254	.230	5–65
	15	.15	8.120	4.015	.314	.245	5–65
CBL 10...	15	.15	10.000	4.000	.269	.230	5–65
	17	.15	10.120	4.010	.329	.240	5–65
	19	.15	10.250	4.020	.394	.250	5–65
CBL 12...	16½	.15	12.000	4.000	.269	.230	5–65
	19	.15	12.160	4.010	.349	.240	5–65
	22	.15	12.310	4.030	.424	.260	5–65
CB 41...	10	.25	4.000	4.000	.265	.220	5–60
CB 51...	*13½	.15	4.86	4.990	.292	.230	Chgo.
	16	.15	5.00	5.000	.360	.240	5–60
	18½	.10	5.12	5.025	.420	.265	5–60
CB 61...	*88	.10	6.842	10.046	1.035	1.035	Chgo.
CB 81...	17	.05	8.00	5.250	.308	.230	5–70
	*19	.05	8.09	5.264	.353	.244	Chgo.
	20	.05	8.14	5.268	.378	.248	Chgo.
	*21	.05	8.19	5.272	.403	.252	Chgo.
CB 82...	24	.10	7.93	6.500	.398	.245	5–70
	*27	.10	8.03	6.528	.448	.273	Chgo.
	28	.10	8.06	6.540	.463	.285	Chgo.
CB 83...	31	.10	8.00	8.000	.433	.288	5–70
	*33	.10	8.06	8.012	.463	.300	Chgo.
	35	.10	8.12	8.027	.493	.315	5–70
	40	.10	8.25	8.077	.558	.365	5–70
	48	.10	8.50	8.117	.683	.405	5–70
	58	.10	8.75	8.222	.808	.510	5–70
	67	.10	9.00	8.287	.933	.575	5–70
CB 101...	21	.05	9.90	5.750	.340	.240	5–70
	*23	.05	10.00	5.750	.390	.240	Chgo.
	25	.05	10.08	5.762	.430	.252	5–70
	*26	.05	10.12	5.769	.450	.259	Chgo.
	29	.05	10.22	5.799	.500	.289	5–70
CB 102...	33	.10	9.75	7.964	.433	.292	5–70
	*37	.10	9.88	7.978	.498	.306	Chgo.
	39	.10	9.94	7 990	.528	.318	5–70
	*41	.10	10.00	8.000	.558	.328	Chgo.
	45	.10	10.12	8.022	.618	.350	5–70
CB 103...	49	.10	10.00	10.000	.558	.340	5–70
	54	.10	10.12	10.028	.618	.368	5–70
	60	.10	10.25	10.075	.683	.415	5–70
	66	.10	10.38	10.117	.748	.457	5–70
	72	.10	10.50	10.170	.808	.510	5–70
	77	.10	10.62	10.195	.868	.535	5–70
	89	.10	10.88	10.275	.998	.615	5–70
	100	.10	11.12	10.345	1.118	.685	5–70
	112	.10	11.38	10.415	1.248	.755	5–70
	*124	.10	11.62	10.505	1.368	.845	Chgo.
	*136	.10	11.88	10.575	1.498	.915	Chgo.
CB 121...	*25	.05	11.87	6.500	.355	.240	Chgo.
	27	.05	11.96	6.500	.400	.240	5–70
	*28	.05	12.00	6.500	.420	.240	Chgo.

(Continued on following page)

WIDE FLANGE—C B SECTIONS

A. S. T. M. A-7-42 Specifications

(Continued)

Section Number	Weight per Foot, Pounds	Extra For Size	Depth of Section, Inches	FLANGE		Web Thick-ness, Inches	Lengths, in Stock Feet
				Width, Inches	Thickness, Inches		
CB 121...	31	.05	12.09	6.525	.465	.265	5–70
	*32	.05	12.12	6.533	.480	.273	Chgo.
	36	.05	12.24	6.565	.540	.305	5–70
CB 122...	40	.10	11.94	8.000	.516	.294	Chgo.
	45	.10	12.06	8.042	.576	.336	5–70
	50	.10	12.19	8.077	.641	.371	5–70
CB 123...	53	.10	12.06	10.000	.576	.345	5–70
	58	.10	12.19	10.014	.641	.359	5–70
	*64	.10	12.31	10.060	.701	.405	Chgo.
CB 124...	65	.10	12.12	12.000	.606	.390	5–70
	72	.10	12.25	12.040	.671	.430	5–70
	79	.10	12.38	12.080	.736	.470	5–70
	85	.10	12.50	12.105	.796	.495	5–70
	92	.10	12.62	12.155	.856	.545	5–70
	99	.10	12.75	12.190	.921	.580	5–70
	106	.10	12.88	12.230	.986	.620	5–70
	120	.10	13.12	12.320	1.106	.710	5–70
	133	.10	13.38	12.365	1.236	.755	5–70
CB 141...	30	.05	13.86	6.733	.383	.270	5–70
	34	.05	14.00	6.750	.453	.287	5–70
	38	.05	14.12	6.776	.513	.313	5–70
	*42	.05	14.24	6.801	.573	.338	Chgo.
CB 142...	43	.10	13.68	8.000	.528	.308	Chgo.
	48	.10	13.81	8.031	.593	.339	5–70
	53	.10	13.94	8.062	.658	.370	5–70
	*58	.10	14.06	8.098	.718	.406	Chgo.
CB 143...	61	.10	13.91	10.000	.643	.378	Chgo.
	68	.10	14.06	10.040	.718	.418	5–70
	74	.10	14.19	10.072	.783	.450	5–70
CB 144...	78	.10	14.06	12.000	.718	.428	5–70
	84	.10	14.18	12.023	.778	.451	5–70
CB 145...	87	.10	14.00	14.500	.688	.420	5–70
	95	.10	14.12	14.545	.748	.465	5–70
	103	.10	14.25	14.575	.813	.495	5–70
CB 161...	36	.05	15.85	6.992	.428	.299	5–70
	40	.05	16.00	7.000	.503	.307	5–70
	45	.05	16.12	7.039	.563	.346	5–70
	50	.05	16.25	7.073	.628	.380	5–70
CB 162...	58	.05	15.86	8.464	.645	.407	5–70
	64	.05	16.00	8.500	.715	.443	5–70
	71	.05	16.16	8.543	.795	.486	5–70
	78	.05	16.32	8.586	.875	.529	5–70
CB 163...	88	.10	16.16	11.502	.795	.504	5–70
	96	.10	16.32	11.533	.875	.535	5–70
	*105	.10	16.48	11.582	.955	.584	Chgo.
	*114	.10	16.64	11.629	1.035	.631	Chgo.
CB 181...	*47	.15	17.90	7.492	.520	.350	Chgo.
	50	.15	18.00	7.500	.570	.358	Chgo.
	55	.15	18.12	7.532	.630	.390	Chgo.
	60	.15	18.25	7.558	.695	.416	5–70
CB 182...	64	.15	17.87	8.715	.686	.403	5–70
	70	.15	18.00	8.750	.751	.438	5–70
	77	.15	18.16	8.787	.831	.475	5–70
	85	.15	18.32	8.838	.911	.526	5–70
CB 183...	96	.15	18.16	11.750	.831	.512	5–70
	105	.15	18.32	11.792	.911	.554	5–70
	114	.15	18 48	11.833	.991	.595	5–70
CB 211...	*59	.15	20.91	8.230	.575	.390	Chgo.
	62	.15	20.99	8.240	.615	.400	5–70
	*63	.15	21.00	8.250	.620	.410	Chgo.
	68	.15	21.13	8.270	.685	.430	5–70
	73	.15	21.24	8.295	.740	.455	5–70

(Concluded on following page

BEAMS
—
CHANNELS
ES - TEES
GLES
PLATES
HEETS
.R. FLATS
STRIP
.R. ROUNDS
MISC.
H.R. BARS
SPRING STEEL
DRILL ROD
OLD
NISHED
ARS
ALLOY BARS
HIGH
STRENGTH
STEEL
RAILS
BOILER TUBE
TAINLESS
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HEETS
PLATES
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ROUNDS
SQUARES
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HEXAGONS
FLATS
—
STRIP
TUBING
PIPE
—
ELECTRODES
TOOLS
SUPPLIES &
MACHINERY
—
DATA

WIDE FLANGE—C B SECTIONS

A. S. T. M. A-7-42 Specifications

(Concluded)

Section Number	Weight per Foot, Pounds	Extra For Size	Depth of Section, Inches	FLANGE Width, Inches	FLANGE Thickness, Inches	Web Thickness, Inches	Lengths In Stock, Feet
CB 212...	82	.15	20.86	8.962	.795	.499	5–70
	*89	.15	21.00	9.000	.865	.537	Chgo.
	96	.15	21.14	9.038	.935	.575	5–70
	*103	.15	21.29	9.071	1.010	.608	Chgo.
CB 213...	112	.15	21.00	13.000	.865	.527	5–70
	*122	.15	21.16	13.040	.945	.567	Chgo.
	127	.15	21.24	13.061	.985	.588	5–70
	142	.15	21.46	13.132	1.095	.659	5–70
CB 241...	*74	.15	23.87	8.975	.662	.430	Chgo.
	76	.15	23.91	8.985	.682	.440	5–70
	*80	.15	24.00	9.000	.727	.455	Chgo.
	84	.15	24.09	9.015	.772	.47	5–70
	*87	.15	24.16	9.025	.807	.480	Chgo.
	94	.15	24.29	9.061	.872	.516	Chgo.
CB 242...	100	.15	24.00	12.000	.775	.468	5–70
	110	.15	24.16	12.042	.855	.510	5–70
	120	.15	24.31	12.088	.930	.556	5–70
CB 243...	130	.15	24.25	14.000	.900	.565	5–70
	*140	.15	24.41	14.029	.980	.594	Chgo.
	145	.15	24.49	14.043	1.020	.608	5–70
	160	.15	24.72	14.091	1.135	.656	5–70
CB 271...	*91	.15	26.84	9.983	.712	.483	Chgo.
	94	.15	26.91	9.990	.747	.490	5–70
	*98	.15	27.00	10.000	.792	.500	Chgo.
	102	.15	27.07	10.018	.827	.518	5–70
	*106	.15	27.14	10.035	.862	.535	Chgo.
	114	.15	27.28	10.070	.932	.570	5–70
CB 272...	145	.15	26.88	13.965	.975	.600	5–70
CB 301...	108	.15	29.82	10.484	.760	.548	5–80
	116	.15	30.00	10.500	.850	.564	5–80
	124	.15	30.16	10.521	.930	.585	5–80
	132	.15	30.30	10.551	1.000	.615	5–80
CB 302...	172	.15	29.88	14.985	1.065	.655	5–80
	*180	.15	30.00	15.000	1.125	.670	Chgo.
	190	.15	30.12	15.040	1.185	.710	5–80
	210	.15	30.38	15.105	1.315	.775	5–80
CB 331...	*125	.20	33.00	11.500	.805	.570	Chgo.
	130	.20	33.10	11.510	.855	.580	Chgo.
	141	.20	33.31	11.535	.960	.605	Chgo.
	152	.20	33.50	11.565	1.055	.635	Chgo.
CB 332...	200	.20	33.00	15.750	1.150	.715	Chgo.

*Rolling will be discontinued.

JUNIOR BEAMS

IN OUR CHICAGO STOCK

Primarily Intended for use in Steel Frame House Construction

A. S. T. M. A-7-42 Specifications

Size, Inches	Weight per Foot, Pounds	Thickness of Web, Inches	Width of Flange, Inches	Extra for Size	Lengths In Stock, Feet
6	4.4	.114	1.844	Base	5–45
* 7	5.5	.126	2.078	Base	5–45
8	6.5	.135	2.281	Base	5–45
* 9	7.5	.145	2.375	Base	Chgo.
10	9.0	.155	2.688	Base	Chgo.
* 11	10.3	.165	2.844	Base	Chgo.
12	11.8	.175	3.063	Base	Chgo.

Lengths 5 ft. and longer cut without extra charge. Under 5 ft., see page 219. *Rolling will be discontinued.

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P. O. B
St. Loui

2113 Fi
Kansas

1008 P
Tulsa 3

P. O. B
Chicag

P. O. B
Milwau

2545 U
St. Pau

1394 E
Clevel

Room 2
Toledo

1281 R
Pittsbu

1401 Li
Buffal

P. O.
Baltim

P. O.
Newa

1617 F
Philad

P. O.
Allsto

STRUCTURAL BEAMS

A. S. T. M. A-7-42 Specifications

Size, Inches	Weight per Foot, Pounds	Thickness of Web, Inches	Width of Flange, Inches	Extra for Size	Lengths in Stock, Feet
3	5.7	0.170	2.330	Base	5–40
	*6.5	0.251	2.411	Base	Chgo.
	7.5	0.349	2.509	Base	5–40
4	7.7	0.190	2.660	Base	5–40
	*8.5	0.253	2.723	Base	Chgo.
	9.5	0.326	2.796	Base	5–40
	*10.5	0.400	2.870	Base	Chgo.
5	10.0	0.210	3.000	Base	5–60
	*12.25	0.347	3.137	Base	Chgo.
	14.75	0.494	3.284	Base	5–60
6	12.5	0.230	3.330	Base	5–60
	*14.75	0.343	3.443	Base	Chgo.
	17.25	0.465	3.565	Base	5–60
7	15.3	0.250	3.660	Base	5–60
	*17.5	0.345	3.775	Base	Chgo.
	20.0	0.450	3.860	Base	5–60
8	18.4	0.270	4.000	Base	5–60
	*20.5	0.349	4.079	Base	Chgo.
	23.0	0.441	4.171	Base	5–60
	*25.5	0.532	4.262	Base	Chgo.
9	*21.8	0.290	4.330	Base	Chgo.
	*25.0	0.397	4.437	Base	Chgo.
	*30.0	0.561	4.601	Base	Chgo.
	*35.0	0.724	4.764	Base	Chgo.
10	25.4	0.310	4.660	Base	5–60
	*30.0	0.447	4.797	Base	Chgo.
	35.0	0.594	4.944	Base	5–60
	*40.0	0.741	5.091	Base	Chgo.
12	31.8	0.350	5.000	Base	5–70
	35.0	0.428	5.078	Base	5–70
	40.8	0.460	5.250	Base	5–70
	*45.0	0.565	5.355	Base	Chgo.
	50.0	0.687	5.477	Base	5–70
	*55.0	0.810	5.600	Base	Chgo.
15	42.9	0.410	5.500	Base	5–70
	50.0	0.550	5.640	Base	5–70
	*55.0	0.648	5.738	Base	Chgo.
	*60.8	0.590	6.000	Base	Chgo.
	*70.0	0.770	6.180	Base	Chgo.
	*75.0	0.868	6.278	Base	Chgo.
	*81.3	0.800	6.400	Base	Chgo.
	*100.0	1.167	6.767	Base	Chgo.
18	54.7	0.460	6.000	.10	5–70
	*60.0	0.547	6.087	.10	Chgo.
	*65.0	0.629	6.169	.10	Chgo.
	70.0	0.711	6.251	.10	5–70
20	65.4	0.500	6.250	10	5–70
	75.0	0.641	6.391	.10	5–70
	*81.4	0.600	7.000	.10	Chgo.
	85.0	0.653	7.053	.10	5–70
	95.0	0.800	7.200	.10	5–70
	*100.0	0.873	7.273	.10	Chgo.
24	79.9	0.500	7.000	.10	5–70
	90.0	0.624	7.124	.10	5–70
	100.0	0.747	7.247	.10	5–70
	105.9	0.625	7.875	.10	5–70
	120.0	0.798	8·048	.10	Chgo.

*Rolling will be discontinued.

Lengths 5 ft. and over cut without extra charge; under 5 ft., see Cutting Extras on page 219.

H-BEAMS

A. S. T. M. A-7-42 Specifications

Size, Inches	Weight per Foot, Pounds	Thickness of Web, Inches	Width of Flange, Inches	Extra for Size	Lengths in Stock, Feet
4	13.0	.250	3.937	.15	5–60
5	18.9	.313	5.000	.10	5–60
6	20.0	.250	5.938	.10	5–60
	*22.5	.375	6.063	.10	Chgo.
	25.0	.313	5.938	.10	5–60
	*27.5	.438	6.063	.10	Chgo.
8	*32.6	.313	7.938	.10	Chgo.
	34.3	.375	8.000	.10	5–60
	*37.7	.500	8.125	.10	Chgo.

STRUCTURAL CHANNELS

A. S. T. M. A-7-42 Specifications

Size, Inches	Weight per Foot, Pounds	Thickness of Web, Inches	Width of Flange, Inches	Extra for Size	Lengths in Stock, Feet
3	4.1	0.170	1.410	Base	5–40
	5.0	0.258	1.498	Base	5–40
	6.0	0.356	1.596	Base	5–40
4	5.4	0.180	1.580	Base	5–40
	* 6.25	0.247	1.647	Base	Chgo.
	7.25	0.320	1.720	Base	5–40
5	6.7	0.190	1.750	Base	5–60
	9.0	0.325	1.885	Base	5–60
	*11.5	0.472	2.032	Base	Chgo.
6	8.2	0.200	1.920	Base	5–60
	10.5	0.314	2.034	Base	5–60
	13.0	0.437	2.157	Base	5–60
	*15.5	0.559	2.279	Base	Chgo.
7	9.8	0.210	2.090	Base	5–60
	12.25	0.314	2.194	Base	5–60
	14.75	0.419	2.299	Base	5–60
	*17.25	0.524	2.404	Base	Chgo.
	*19.75	0.629	2.509	Base	Chgo.
8	11.5	0.220	2.260	Base	5–60
	13.75	0.303	2.343	Base	5–60
	*16.25	0.395	2.435	Base	Chgo.
	18.75	0.487	2.527	Base	5–60
	*21.25	0.579	2.619	Base	Chgo.
9	13.4	0.230	2.430	Base	5–60
	15.0	0.285	2.485	Base	5–60
	20.0	0.448	2.648	Base	5–60
	*25.0	0.612	2.812	Base	Chgo.
10	15.3	0.240	2.600	Base	5–60
	20.0	0.379	2.739	Base	5–60
	25.0	0.526	2.886	Base	5–60
	30.0	0.673	3.033	Base	5–60
	*35.0	0.820	3.180	Base	Chgo.
12	20.7	0.280	2.940	Base	5–60
	25.0	0.387	3.047	Base	5–60
	30.0	0.510	3.170	Base	5–60
	*35.0	0.632	3.292	Base	Chgo.
	*40.0	0.755	3.415	Base	Chgo.
13	31.8	0.375	4.000	Base	5–60
	35.0	0.447	4.072	Base	Chgo.
	*37.0	0.492	4.117	Base	Chgo.
	40.0	0.560	4.185	Base	5–60
	50.0	0.787	4.142	Base	5–60
15	33.9	0.400	3.400	Base	5–60
	*35.0	0.422	3.422	Base	Chgo.
	40.0	0.520	3.520	Base	5–60
	*45.0	0.618	3.618	Base	Chgo.
	50.0	0.716	3.716	Base	5–60
	*55.0	0.814	3.814	Base	Chgo.
18	42.7	0.450	3.950	.10	5–60
	45.8	0.500	4.000	.10	5–60
	51.9	0.600	4.100	.10	5–60
	58.0	0.700	4.200	.10	5–60

*Rolling will be discontinued. Lengths 5 ft. and longer cut without extra charge; under 5 ft., see cutting extras, page 219.

CAR AND SHIP BUILDING CHANNELS

A. S. T. M. A-7-42 Specifications

Size, Inches	Weight per Foot, Pounds	Thickness of Web, Inches	Width of Flange, Inches	Extra for size	Lengths in Stock, Feet
3	7.1	0.313	1.938	Base	5–60
4	13.8	0.500	2.500	.10	5–60
6	12.0	0.313	2.500	Base	5–60
	15.3	0.340	3.500	Base	5–60
	16.3	0.375	3.000	Base	5–60
	18.0	0.375	3.500	Base	5–60
7	15.6	0.313	3.313	Base	Chgo.
	17.6	0.375	3.000	Base	5–60
	19.1	0.350	3.450	Base	5–60
	*20.3	0.400	3.500	Base	Chgo.
	22.7	0.350	3.450	Base	5–60
	*25.0	0.600	3.700	Base	Chgo.
8	21.4	0.375	3.450	Base	5–60
	*21.5	0.415	3.415	Base	Chgo.
	22.8	0.425	3.500	Base	5–60
9	23.9	0.400	3.450	Base	5–60
	25.4	0.450	3.500	Base	5–60
	*27.1	0.425	3.950	Base	Pitts.
	*28.5	0.550	3.600	Base	Chgo.
10	21.7	0.375	3.375	Base	Chgo.
	21.9	0.325	3.450	Base	5–60
	*23.6	0.375	3.500	Base	Pitts.
	24.9	0.375	3.400	Base	Newark
	25.3	0.425	3.550	Base	5–60
	*26.6	0.425	3.450	Base	Newark
	28.5	0.425	3.950	Base	Pitts.
12	32.9	0.500	3.500	Base	5–60
	*34.5	0.475	3.950	Base	Chgo.
	35.0	0.467	3.767	Base	5–60
13	31.8	0.375	4.000	Base	5–60
	35.0	0.447	4.072	Base	Chgo.
	*37.0	0.492	4.117	Base	Chgo.
	40.0	0.560	4.185	Base	5–60
	50.0	0.787	4.412	Base	5–60
18	42.7	0.450	3.950	.10	5–60
	45.8	0.500	4.000	.10	5–60
	51.9	0.600	4.100	.10	5–60
	58.0	0.700	4.200	.10	5–60

*Rolling will be discontinued. Lengths 5 ft. and longer cut without extra charge; under 5 ft., see cutting extras, page 219.

ROLLED
STAIR STRINGER CHANNELS

A rolled light weight section designed for use as a stair stringer

A. S. T. M. A-7-42 Specifications

Depth Channel, Inches	Weight per Foot, Pounds	Thickness of Web, Inches	Width of Flange, Inches	Extra for Size	Lengths in Stock, Feet
10	6.5	0.150	1.125	Base	5–60
	8.4	0.170	1.500	Base	5–60
12	10.6	0.190	1.500	Base	5–60

PRESSED STEEL
STAIR STRINGERS

We can furnish Pressed Steel Channel Stair Stringers made of 3⁄16″ or 1⁄4″ steel, where outside rounded corners are preferred. These stringers can be made in any web width desired and in lengths up to 25 feet.

CHANNELS–BAR SIZES

MILD STEEL

Size, Inches	Weight per Foot, Pounds	Extra for size	Lengths in Stock, Feet	Size, Inches	Weight per Foot, Pounds	Extra for size	Lengths in Stock, Feet
½x¼x 3/32	.25	3.00	New'k.	1½x ½x3/16	1.32	.25	Chgo.
½x¼x ⅛	.28	2.50	20	1½x ½x¼	1.53	.25	Chgo.
⅝x 5/16x⅛	.41	.70	Chgo.	1½x 9/16x3/16	1.36	.25	20,25
¾x 5/16x⅛	.50	.60	20	1½x 9/16x¼	1.64	.25	Chgo.
¾x11/32x3/32	.45	1.00	Chgo.	1½x ¾x⅛	1.17	.40	20,25
¾x ⅜x#15	.40	1.00	Chgo.	1½x 1½x3/16	2.65	.75	20,25
¾x ⅜x⅛	.52	.60	20,25	1¾x ½x3/16	1.55	.25	20,25
⅞x ⅜x⅛	.58	.60	20	2 x ½x⅛	1.33	.40	20,25
⅞x 7/16x⅛	.69	.60	20	2 x 9/16x3/16	1.76	.25	20,25
1 x ⅜x⅛	.68	.50	20,25	2 x ⅝x3/16	1.98	.25	20
1 x ½x⅛	.79	.50	20,25	2 x ⅝x¼	2.10	.25	20,25
1⅛x 9/16x3/16	1.16	.40	20	2 x1 x⅛	1.59	.40	20,25
1¼x ½x⅛	.93	.50	20,25	2 x1 x3/16	2.32	.25	20,25
1¼x ½x3/16	1.12	.40	Chgo.	2½x ⅝x3/16	2.27	.25	20,25
1½x ½x⅛	1.04	.40	20,25	2½x11/16x¼	2.80	.25	Chgo.

GALVANIZED CHANNELS

Size, Inches	Weight per Foot, Pounds	Lengths in Stock, Feet	Size, Inches	Weight per Foot, Pounds	Lengths in Stock, Feet
¾x ⅜x⅛	.59	20	1½x ½x⅛	1.09	20
1 x ⅜x⅛	.72	20	1½x ½x3/16	1.39	20
1 x ½x⅛	.83	20	1½x ¾x⅛	1.23	20
1¼x ½x⅛	1.04	20	2 x1 x3/16	2.44	20

Prices subject to quotation. Other sizes galvanized when required.

FOR

EXPANDED METAL

CATWALK GRATING

INDUSTRIAL MESH

AND SHELF-X

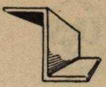
See

Pages 134 and 135

ZEES - TEES
—
ANGLES

STEEL ZEES

A. S. T. M. A-7-42 Specifications



Size, Inches				Weight per Foot, Pounds	Extra for Size	Lengths in Stock, Feet
Flange	Web	Flange	Thickness			
†1¼	1¾	1¾	3/16	2.79	.45	20, 40
†1¼	1¾	2⅛	7/32	3.49	.45	20, 40
†1¾	1¾	1¾	3/16	3.16	.20	20, 40
2 11/16	3	2 11/16	¼	6.7	Base	5–60
*2¾	3 1/16	2¾	5/16	8.5	Base	Chgo.
2 11/16	3	2 11/16	⅜	9.8	Base	5–60
2 11/16	3	2 11/16	½	12.6	Base	Chgo.
3 1/16	4	3 1/16	¼	8.2	Base	5–60
3⅛	4 1/16	3⅛	5/16	10.3	Base	5–60
3 3/16	4⅛	3 3/16	⅜	12.5	Base	5–60
*3 1/16	4	3 1/16	7/16	13.8	Base	Chgo.
3⅛	4 1/16	3⅛	½	15.9	Base	Chgo.
3¼	5	3¼	5/16	11.6	Base	5–60
3 5/16	5 1/16	3 5/16	⅜	14.0	Base	5–60
3¼	5	3¼	½	17.9	Base	5–60
3½	6	3½	⅜	15.7	Base	5–60
3⅝	6⅛	3⅝	½	21.1	Base	5–60

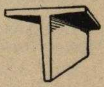
*Rolling will be discontinued.

†These sizes are Copper Steel and subject to a Quality Extra of **25c** per 100 lbs.

For cutting extras under 5 ft. see pages 219 and 220.

TEES-BAR SIZES

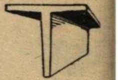
A. S. T. M. A-7-42 Specifications



Size, Inches			Weight per Foot, Pounds	Extra for Size	Lengths in Stock, Feet
Flange	Stem	Thickness			
¾	¾	⅛	.61	1.10	20
⅞	⅞	⅛	.73	.90	20
1	1	⅛	.85	.70	20
1	1	3/16	1.20	.55	20
1⅛	1⅛	⅛	.97	.70	Chgo.
1⅛	1⅛	3/16	1.37	.55	Chgo.
1¼	1¼	⅛	1.09	.70	20
1¼	1¼	3/16	1.55	.55	20, 40
1¼	1¼	¼	1.93	.55	20, 40
1½	1½	3/16	1.88	.30	20, 40
1½	1½	¼	2.43	.30	20, 40
1¾	1¾	3/16	2.26	.30	20, 40
1¾	1¾	¼	2.90	.30	20, 40
2	1½	¼	3.10	.30	20, 40
2	2	¼	3.56	.30	20, 40
2	2	5/16	4.30	.30	20, 40
2¼	2¼	¼	4.10	.30	20, 40
2¼	2¼	5/16	4.90	.30	Chgo.
2½	2½	¼	4.60	.30	20, 40
2½	2½	5/16	5.50	.30	20, 40
2½	2½	⅜	6.40	.30	20, 40

For Cutting Extras see Page 220.

STRUCTURAL TEES



A. S. T. M. A-7-42 Specifications

Flange	Stem	Thickness	Weight per Foot, Pounds	Extra for Size	Lengths in Stock, Feet
*2½	3	5/16	6.10	.10	Chgo.
3	2½	5/16	6.10	.10	5–60
3	3	5/16	6.70	.10	5–60
		3/8	7.80	.10	5–60
*3	3½	3/8	8.50	.10	Chgo.
*3½	3	3/8	8.50	.10	Chgo.
*3½	3½	3/8	9.20	.10	Chgo.
*		½	11.70	.10	Chgo.
*3½	4	3/8	9.80	.10	Chgo.
4	2½	3/8	8.50	.10	Pitts.
4	3	3/8	9.20	.10	5–60
*4	4	3/8	10.50	.10	Chgo.
		½	13.50	.10	5–60
*4	5	3/8	11.90	.10	Chgo.
*		½	15.30	.10	Chgo.
*4½	2½	3/8	9.20	.10	Chgo.
*†4½	3½	7/16–11/16	15.70	.10	Chgo.
†5	3⅛	½–13/32	13.60	.10	5–60
*†6½	6½	.40–.45	19.80	.20	Chgo.

*Rolling will be discontinued.

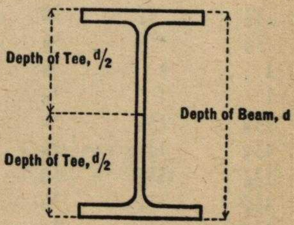
†Flange thickness is shown first. Stem thickness last.

Lengths 5 ft. and longer cut without extra charge; under 5 ft., see cutting extras, page 219.

OTHER SIZES OF

STRUCTURAL TEES

Produced by Splitting I-Beams



Any wide flange or standard beam 4 in or greater in depth can be furnished split by flame cutting.

Tees so made should be ordered in pairs so as to utilize all of the beam from which they are produced. See sketch.

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14 Sc
9

P. O. B
St. Loui

2113 Fic
Kansas

1008 Pe
Tulsa 3

P. O. B
Chicag

P. O. B
Milwau

2545 U
St. Pau

1394 Ec
Clevelc

Room 2
Toledo

1281 Re
Pittsbu

1401 Li
Buffalo

P. O.
Baltim

P. O.
Newa

1617 F
Philad

P. O.
Allsto

STRUCTURAL ANGLES

A. S. T. M. A-7-42 Specifications

Size Inches	Weight per Foot, Pounds	Extra for Size	Lengths in Stock, Feet
3 x2 x3/16	3.07	.35	5-60
1/4	4.1	Base	5-60
5/16	5.0	Base	5-60
3/8	5.9	Base	5-60
1/2	7.7	Base	5-60
*3 x2½x3/16	3.39	.35	Newark
1/4	4.5	Base	5-60
5/16	5.6	Base	5-60
3/8	6.6	Base	5-60
1/2	8.5	Base	5-60
*5/8	10.5	Base	Chgo.
*3 x3 x1/8	2.50	.75	Chgo.
3/16	3.71	.35	5-60
1/4	4.9	Base	5-60
5/16	6.1	Base	5-60
3/8	7.2	Base	5-60
7/16	8.3	Base	5-60
1/2	9.4	Base	5-60
*5/8	11.5	Base	Chgo.
3½x2½x1/4	4.9	Base	5-60
5/16	6.1	Base	5-60
3/8	7.2	Base	5-60
1/2	9.4	Base	5-60
*5/8	11.5	Base	Chgo.
3½x3 x1/4	5.4	Base	5-60
5/16	6.6	Base	5-60
3/8	7.9	Base	5-60
1/2	10.2	Base	5-60
3½x3½x1/4	5.8	Base	5-60
5/16	7.2	Base	5-60
3/8	8.5	Base	5-60
7/16	9.8	Base	5-60
1/2	11.1	Base	5-60
*5/8	13.6	Base	Chgo.
4 x3 x1/4	5.8	.15	5-60
5/16	7.2	Base	5-60
3/8	8.5	Base	5-60
7/16	9.8	Base	Chgo.
1/2	11.1	Base	5-60
5/8	13.6	Base	5-60
*3/4	16.0	Base	Chgo.
4 x3½x1/4	6.2	.15	5-60
5/16	7.7	Base	5-60
3/8	9.1	Base	5-60
7/16	10.6	Base	Chgo.
1/2	11.9	Base	5-60
4 x4 x1/4	6.6	.15	5-60
5/16	8.2	Base	5-60
3/8	9.8	Base	5-60
7/16	11.3	Base	5-60
1/2	12.8	Base	5-60
5/8	15.7	Base	5-60
3/4	18.5	Base	5-60
*4½x3 x5/16	7.7	Base	Chgo.
*3/8	9.1	Base	Chgo.
5 x3 x1/4	6.6	.15	5-60
5/16	8.2	Base	5-60
3/8	9.8	Base	5-60
7/16	11.3	Base	Chgo.

Size, Inches	Weight per Foot, Pounds	Extra for Size	Lengths in Stock, Feet
5 x3 x1/2	12.8	Base	5-60
*5/8	15.7	Base	Chgo.
*3/4	18.5	Base	Chgo.
5 x3½x5/16	8.7	Base	5-60
3/8	10.4	Base	5-60
7/16	12.0	Base	5-60
1/2	13.6	Base	5-60
5/8	16.8	Base	5-60
3/4	19.8	Base	Chgo.
*5 x4 x5/16	9.3	.10	Newark
*3/8	11.0	Base	Chgo.
*1/2	14.5	Base	Chgo.
*3/4	21.1	Base	Chgo.
5 x5 x3/8	12.3	Base	5-60
7/16	14.3	Base	Chgo.
1/2	16.2	Base	5-60
5/8	20.0	Base	5-60
3/4	23.6	Base	5-60
*1	30.6	Base	Chgo.
6 x3½x5/16	9.8	.10	5-60
3/8	11.7	Base	5-60
*7/16	13.5	Base	Chgo.
1/2	15.3	Base	5-60
*5/8	18.9	Base	Chgo.
6 x4 x5/16	10.3	.10	5-60
3/8	12.3	Base	5-60
7/16	14.3	Base	5-60
1/2	16.2	Base	5-60
5/8	20.0	Base	5-60
3/4	23.6	Base	5-60
7/8	27.2	Base	Chgo.
*1	30.6	Base	Chgo.
6 x6 x3/8	14.9	Base	5-60
7/16	17.2	Base	5-60
1/2	19.6	Base	5-60
5/8	24.2	Base	5-60
3/4	28.7	Base	5-60
7/8	33.1	Base	5-60
1	37.4	Base	5-60
*7 x3½x3/8	13.0	.10	Chgo.
*1/2	17.0	.10	Chgo.
*5/8	21.0	.10	Chgo.
7 x4 x3/8	13.6	.10	5-60
7/16	15.8	.10	Newark
1/2	17.9	.10	5-60
5/8	22.1	.10	5-60
8 x4 x1/2	19.6	.10	5-60
5/8	24.2	.10	Pitts.
3/4	28.7	.10	Pitts.
8 x6 x1/2	23.0	.10	5-60
5/8	28.5	.10	Chgo.
3/4	33.8	.10	5-60
1	44.2	.10	5-60
8 x8 x1/2	26.4	.10	5-60
5/8	32.7	.10	Chgo.
3/4	38.9	.10	5-60
7/8	45.0	.10	Chgo
1	51.0	.10	5-60

*Rolling will be discontinued.

Lengths 5 ft. and longer cut without extra charge; under ft., see cutting extras, page 219.

ANGLES — BAR SIZES

FILLET

A. S. T. M. A-7-42 Specifications

Size, Inches	Wt. Per Ft., Lbs.	Extra For Size	Lengths in Stock, Feet
½x ½x⅛	0.38	2.20	20
⅝x ⅝ ⅛	0.48	1.50	20
¾x ¾x⅛	0.59	.60	20
³⁄₁₆	0.84	.45	Chgo.
⅞x ⅞x⅛	0.70	.40	20
1 x ⅝x⅛	0.64	.60	20
1 x ¾x⅛	0.70	.60	Chgo.
1 x1 x⅛	0.80	.30	20, 40
³⁄₁₆	1.16	.25	20, 40
¼	1.49	.25	20, 40
1⅛x1⅛x⅛	0.91	.30	20
1¼x ⅞x⅛	0.85	.40	Newark
1¼x1¼x⅛	1.01	.30	20, 40
³⁄₁₆	1.48	.25	20, 40
¼	1.92	.25	20, 40
1⅜x ⅞x⅛	0.91	.40	20, 40
³⁄₁₆	1.32	.35	Chgo.
1½x1¼x³⁄₁₆	1.64	.25	Chgo.
¼	2.13	.25	Pitts.
1½x1½x⅛	1.23	.25	20, 40
³⁄₁₆	1.80	.15	20, 40
¼	2.34	.15	20, 40
⁵⁄₁₆	2.86	.15	Chgo.
⅜	3.35	.15	Chgo.
1¾x ⅞x⅛	1.07	.40	Chgo.
1¾x1¼x⅛	1.23	.30	Chgo.
¼	2.34	.25	Newark
1¾x1¾x⅛	1.44	.25	20, 40
³⁄₁₆	2.12	.15	20, 40
¼	2.77	.15	20, 40
⁵⁄₁₆	3.39	.15	Chgo.
⅜	3.99	.15	Newark
2 x1 x⅛	1.23	.40	Chgo.
³⁄₁₆	1.80	.30	Chgo.

Size, Inches	Wt. Per Ft., Lbs.	Extra For Size	Lengths in stock, Feet
2 x1¼x³⁄₁₆	1.96	.25	20, 40
¼	2.55	.25	20, 40
2 x1½x⅛	1.44	.25	20, 40
³⁄₁₆	2.12	.15	20, 40
¼	2.77	.15	20, 40
⁵⁄₁₆	3.39	.15	Chgo.
2 x2 x⅛	1.65	.25	20, 40
³⁄₁₆	2.44	.15	20, 40
¼	3.19	.15	20, 40
⁵⁄₁₆	3.92	.15	20, 40
⅜	4.70	.15	20, 40
½	6.00	.15	Chgo.
2¼x1½x³⁄₁₆	2.28	.20	Chgo.
¼	2.98	.20	Newark
2¼x2¼x⅛	1.86	.25	Chgo.
³⁄₁₆	2.75	.15	Chgo.
¼	3.62	.15	Chgo.
⁵⁄₁₆	4.50	.15	Chgo.
⅜	5.30	.15	Chgo.
2½x1½x⅛	1.65	.25	Newark
³⁄₁₆	2.44	.20	20, 40
¼	3.19	.20	20, 40
⁵⁄₁₆	3.92	.20	Pitts.
2½x2 x⅛	1.86	.25	Chgo.
³⁄₁₆	2.75	.15	20, 40
¼	3.62	.15	20, 40
⁵⁄₁₆	4.50	.15	20, 40
⅜	5.30	.15	20, 40
½	6.74	.15	Chgo.
2½x2½x⅛	2.08	.25	Chgo.
³⁄₁₆	3.07	.15	20, 40
¼	4.10	.15	20, 40
⁵⁄₁₆	5.00	.15	20, 40
⅜	5.90	.15	20, 40
½	7.70	.15	20, 40

For Cutting Extras, see page 219.

FOR

STAINLESS STEEL ANGLES

See Page 112

SQUARE ROOT ANGLES
EQUAL LEG

IN OUR CHICAGO STOCK

A. S. T. M. A-7-42 Specifications

Size, Inches	Length	Wt. Per Ft., Lbs.	Extra For Size	Size, Inches	Length	Wt. Per Ft., Lbs.	Extra For Size
¾x ¾x⅛	20′0″	.59	.95	1½x1½x3/16	20′0″	1.80	.50
1 x1 x⅛	20′0″	.80	.65	1½x1½x¼	20′0″	2.34	.50
1¼x1¼x⅛	20′0″	1.01	.65	1¾x1¾x3/16	20′0″	2.12	.50
1¼x1¼x3/16	20′0″	1.48	.60	2 x2 x3/16	20′0″	2.44	.50
1½x1½x⅛	20′0″	1.23	.60	2 x2 x¼	20′0″	3.19	.50

GALVANIZED ANGLES

Size, Inches	Est. Wt. Ft., lbs.	Lengths in Stock, Feet	Size, Inches	Est. Wt. Ft., lbs.	Leng'hs in Stock, Feet
½x ½x⅛	.40	20	1¾x1¾x⅛	1.51	20
⅝x ⅝x⅛	.50	20	3/16	2.23	20
¾x ¾x⅛	.62	20	¼	2.91	Chgo.
1 x ⅝x⅛	.67	20	2 x1½x⅛	1.51	20
1 x1 x⅛	.84	20	3/16	2.23	Chgo.
3/16	1.22	20	2 x2 x3/16	2.56	20
1¼x1¼x⅛	1.06	20	¼	3.35	20
3/16	1.55	20	2½x2½x3/16	3.22	20
1⅜x ⅞x⅛	.96	20	¼	4.31	20
1½x1½x⅛	1.29	20	3 x2 x¼	4.31	Chgo.
3/16	1.89	20	3 x3 x3/16	3.90	Chgo.
¼	2.46	20	¼	5.20	Chgo.

Prices subject to quotation. Other sizes galvanized when required.

BULB ANGLES

(Hull Steel) American Bureau of Shipping Specifications

IN OUR BALTIMORE AND NEWARK STOCKS

Size, Inches	Extra for Size	Size, Inches	Extra for Size
4 x 3½ x 11.9	.30	7 x 3½ x 17.1	.30
5 x 2½ x 7.3	.30	8 x 3½ x 20.0	.30
5 x 3½ x 13.0	.30	9 x 3½ x 21.6	.30
†6 x 3 x 13.2	.30	x 23.8	.30
6 x 3½ x 10.7	.30	10 x 3½ x 32.3	.30
13.9	.30		

†Rolling will be discontinued.

Cutting extras same as structurals Page 219.

FOR
STAINLESS STEEL ANGLES

See Page 112

PLATES
HEETS
.R. FLATS STRIP
.R. ROUNDS
MISC. H.R. BARS
SPRING STEEL — DRILL ROD
OLD NISHED ARS
ALLOY BARS
HIGH STRENGTH STEEL
RAILS BOILER TUB
TAINLESS TEEL HEETS
PLATES — ANGLES — ROUNDS
SQUARES — HEXAGONS
FLATS — STRIP
TUBING — PIPE — ELECTRODES
TOOLS SUPPLIES & MACHINERY — DATA

14
9

P. O. B
St. Loui

2113 Fi
Kansas

1008 Pe
Tulsa 3

P. O. B
Chicag

P. O. B
Milwau

2545 U
St. Pau

1394 E
Clevel

Room 2
Toledo

1281 R
Pittsbu

1401 Li
Buffal

P. O.
Baltim

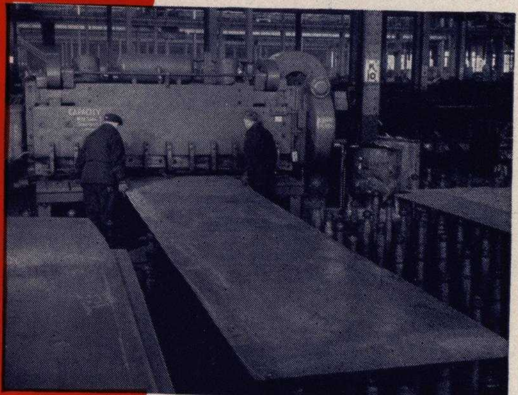
P. O.
Newa

1617
Philad

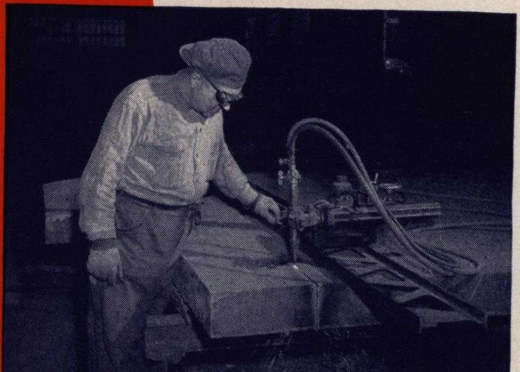
P. O.
Allsto

MODERN PLATE SHEARING AND FLAME CUTTING FACILITIES

- **In order to give the best possible service, we have equipped our warehouses with modern, high grade cutting equipment. Better equipment insures greater accuracy and cleaner cuts thereby reducing, and in some cases eliminating, the necessity for machining.**

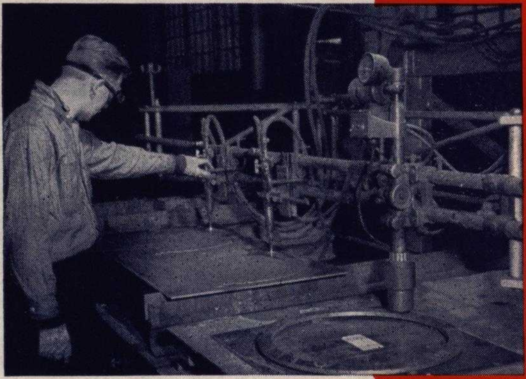


This is our High Speed 1″ Plate Shear, showing ball transfers set in floor to facilitate rolling plates into shear. It has a width capacity of 10′ and a maximum slitting capacity of 36″. Various mechanical refinements insure straight and parallel cuts and also reduce the usual twist in very narrow strips.

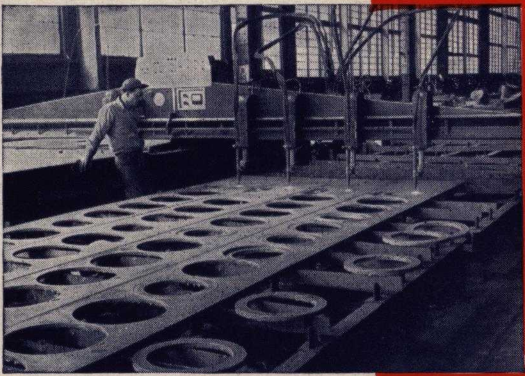


Here the operator is using a Single Torch Machine to flame cut a 6″ plate. This machine is also used for cutting large circles.

On this illustration a circle is being cut on a circle cutting machine of our own design. Maximum diameter—48″ circle or ring. Exact cutting up to 10″ thickness. 500 lb. capacity.



This unusual Twin Torch Pantograph is also of our own design. This machine can be used to flame cut any shape up to 36″ in width and up to 56″ in length.



Our flame cutting equipment includes this 4 Torch Shape Cutting Machine. This illustration shows four rings being cut at one time. It is possible to cut any shape up to 10′ wide and up to 40′ long.

PLATES
HEETS
.R. FLATS
STRIP
.R. ROUNDS
MISC.
H.R. BARS
SPRING STEEL
—
DRILL ROD
OLD
NISHED
ARS
ALLOY BARS
HIGH
STRENGTH
STEEL
RAILS
BOILER TU
TAINLESS
TEEL
HEETS
PLATES
—
ANGLES
—
ROUNDS
SQUARES
—
HEXAGONS
FLATS
—
STRIP
TUBING
—
PIPE
—
ELECTRODES
TOOLS
SUPPLIES &
MACHINERY
—
DATA

UNIVERSAL MILL and SHEARED PLATES

A. S. T. M. A-7-42 Specifications

Size, Inches	Weight per Lin. Foot, Pounds	Extra for Size	Lengths in Stock, Feet
3/16 7–12″	See H. R. Strip		
Over 12″ to 48″	See H. R. Sheets		
x 54	34.43	.20	5–30
60	38.25	.20	5–30
66	42.08	.20	5–30
72	45.90	.20	5–30
78	49.73	.70	Pitts.
80	51.00	.70	Pitts.
84	53.55	.70	5–30
90	57.38	.80	Pitts.
96	61.20	.80	5–30
1/4x 7	5.95	Base	5–40
8	6.80	Base	5–40
9	7.65	Base	5–40
10	8.50	Base	5–40
12	10.20	Base	5–40
14	11.90	Base	5–40
15	12.75	Base	5–40
16	13.60	Base	5–40
18	15.30	Base	5–40
20	17.00	Base	5–40
22	18.70	Base	5–40
24	20.40	Base	5–40
26	22.10	Base	St. P.
28	23.80	Base	St. P.
30	25.50	Base	5–40
36	30.60	Base	5–40
42	35.70	Base	5–40
48	40.80	Base	5–40
54	45.90	Base	5–40
60	51.00	Base	5–40
66	56.10	Base	5–40
72	61.20	Base	5–40
78	66.30	Base	Pitts.
84	71.40	Base	5–40
96	81.60	Base	5–40
120	102.00	.15	5–30
5/16x 7	7.44	Base	5–40
8	8.50	Base	5–40
9	9.56	Base	5–40
10	10.63	Base	5–40
12	12.75	Base	5–40
14	14.88	Base	5–40
15	15.94	Base	5–40
16	17.00	Base	5–40
18	19.13	Base	5–40
20	21.25	Base	5–40
22	23.38	Base	5–40
24	25.50	Base	5–40
26	27.63	Base	St. P.
28	29.75	Base	St. P.
30	31.88	Base	5–40
36	38.25	Base	5–40
42	44.63	Base	5–40
48	51.00	Base	5–40
54	57.38	Base	5–40
5/16x 60	63.75	Base	5–40
66	70.13	Base	Pitts.
72	76.50	Base	5–40
84	89.25	Base	5–40
96	102.00	Base	5–40
120	127.50	.15	5–30
3/8x 7	8.93	Base	5–40
Y 8	10.20	Base	5–40
9	11.48	Base	5–40
10	12.75	Base	5–40
12	15.30	Base	5–40
14	17.85	Base	5–40
15	19.13	Base	5–40
16	20.40	Base	5–40
18	22.95	Base	5–40
20	25.50	Base	5–40
22	28.05	Base	5–40
24	30.60	Base	5–40
26	32.15	Base	St. P.
28	35.70	Base	St. P.
30	38.25	Base	5–40
36	45.90	Base	5–40
42	53.55	Base	5–40
48	61.20	Base	5–40
54	68.85	Base	5–40
60	76.50	Base	5–40
66	84.15	Base	Pitts.
72	91.80	Base	5–40
84	107.10	Base	5–40
96	122.40	Base	5–40
120	153.00	.15	5–30
7/16x 7	10.41	Base	5–40
8	11.90	Base	5–40
9	13.39	Base	5–40
10	14.88	Base	5–40
12	17.85	Base	5–40
14	20.83	Base	5–40
16	23.80	Base	5–40
24	35.70	Base	5–40
30	44.63	Base	5–40
36	53.55	Base	5–40
42	62.48	Base	5–40
48	71.40	Base	5–40
54	80.33	Base	5–40
60	89.25	Base	5–40
72	107.10	Base	5–40
84	124.95	Base	Chgo.
96	142.80	Base	Chgo.
120	178.50	.15	Chgo.
1/2x 7	11.90	Base	5–40
Y 8	13.60	Base	5–40
9	15.30	Base	5–40
10	17.00	Base	5–40
12	20.40	Base	5–40
† 14	23.80	Base	5–40
15	25.50	Base	Chgo.
† 16	27.20	Base	5–40

(Continued on following page)

UNIVERSAL MILL and SHEARED PLATES

A. S. T. M. A-7-42 Specifications

Size, Inches	Weight per Lin. Foot, Pounds	Extra for Size	Lengths in Stock, Feet
½x 18	30.60	Base	5–40
20	34.00	Base	5–40
22	37.40	Base	5–40
24	40.80	Base	5–40
26	44.20	Base	St. P.
28	47.60	Base	St. P.
30	51.00	Base	5–40
36	61.20	Base	5–40
42	71.40	Base	5–40
48	81.60	Base	5–40
54	91.80	Base	5–40
60	102.00	Base	5–40
66	112.20	Base	Pitts.
72	122.40	Base	5–40
84	142.80	Base	5–40
96	163.20	Base	5–40
120	204.00	.15	5–30
9/16x 30	57.38	Base	5–40
36	68.85	Base	5–40
42	80.33	Base	5–40
48	91.80	Base	5–40
54	103.28	Base	5–40
60	114.75	Base	5–40
72	137.70	Base	5–40
96	183.60	Base	△New'k.
⅝x 7	14.88	Base	5–40
Y 8	17.00	Base	5–40
9	19.13	Base	5–40
10	21.25	Base	5–40
X 12	25.50	Base	5–40
14	29.75	Base	5–40
15	31.88	Base	St. P.
16	34.00	Base	5–40
18	38.25	Base	5–40
20	42.50	Base	5–40
22	46.75	Base	Chgo.
24	51.00	Base	5–40
26	55.25	Base	St. P.
28	59.50	Base	St. P.
30	63.75	Base	5–40
36	76.50	Base	5–40
42	89.25	Base	5–40
48	102.00	Base	5–40
54	114.75	Base	Pitts.
60	127.50	Base	5–40
72	153.00	Base	5–40
84	178.50	Base	5–40
96	204.00	Base	5–40
108	229.50	.05	△New'k.
120	255.00	.15	△New'k.
11/16x 48	112.20	Base	New'k.
96	224.40	Base	New'k.
¾x 7	17.85	Base	5–40
X 8	20.40	Base	5–40
9	22.95	Base	5–40
X 10	25.50	Base	5–40
X 12	30.60	Base	5–40
14	35.70	Base	5–40
¾x 15	38.25	Base	St. P.
16	40.80	Base	5–40
18	45.90	Base	5–40
20	51.00	Base	5–40
22	56.10	Base	Chgo.
24	61.20	Base	5–40
26	66.30	Base	St. P.
28	71.40	Base	St. P.
30	76.50	Base	5–40
36	91.80	Base	5–40
42	107.10	Base	5–40
48	122.40	Base	5–40
54	137.70	Base	Pitts.
60	153.00	Base	5–40
72	183.60	Base	5–40
84	214.20	Base	5–40
96	244.80	Base	5–40
120	306.00	.15	△New'k.
⅞x 7	20.83	Base	5–40
8	23.80	Base	5–40
10	29.75	Base	5–40
12	35.70	Base	5–40
14	41.65	Base	5–40
16	47.60	Base	Chgo.
24	71.40	Base	Chgo.
30	89.25	Base	5–40
36	107.10	Base	5–40
48	142.80	Base	5–40
60	178.50	Base	5–40
72	214.20	Base	5–40
84	249.90	Base	Chgo.
96	285.60	Base	Chgo.
1 x 7	23.80	Base	5–40
8	27.20	Base	5–40
9	30.60	Base	5–40
10	34.00	Base	5–40
Z 12	40.80	Base	5–40
14	47.60	Base	5–40
16	54.40	Base	5–40
18	61.20	Base	5–40
20	68.00	Base	5–40
24	81.60	Base	5–40
30	102.00	Base	5–40
36	122.40	Base	5–40
42	142.80	Base	Pitts.
48	163.20	Base	5–40
60	204.00	Base	5–40
72	244.80	Base	5–40
84	285.60	Base	Chgo.
96	326.40	Base	Chgo.
1⅛x 48	183.60	Base	Pitts.
60	229.50	Base	30
72	275.40	Base	30
100	382.50	Base	Chgo.
1¼x 7	29.75	Base	5–40
8	34.00	Base	5–40

(Concluded on following page)

UNIVERSAL MILL and SHEARED PLATES

A. S. T. M. A-7-42 Specifications

Size, Inches	Weight per Lin. Foot, Pounds	Extra for Size	Lengths in Stock, Feet
1¼x 9	38.25	Base	Balt.
10	42.50	Base	5–40
12	51.00	Base	5–40
48	204.00	Base	Pitts.
60	255.00	Base	30
72	306.00	Base	30
84	357.00	Base	St. Paul
100	425.00	Base	Chgo.
1⅜x 48	224.40	Base	Pitts.
72	336.60	Base	30
1½x 7	35.70	Base	5–40
8	40.80	Base	5–40
8½	43.85	Base	Pitts.
9	45.90	Base	Chgo.
10	51.00	Base	5–40
12	61.20	Base	5–40
48	244.80	Base	Chgo.
60	306.00	Base	30
72	367.20	Base	30
96	489.60	Base	New'k.
100	510.00	Base	Chgo.

Size, Inches	Weight per Lin. Foot, Pounds	Extra for Size	Lengths in Stock, Feet
1⅝x 48	265.20	Base	Pitts.
72	397.80	Base	30
1¾x 8	47.60	Base	Chgo.
10	59.50	Base	Chgo.
12	71.40	Base	Chgo.
48	285.60	Base	Chgo.
60	357.00	Base	30
72	428.40	Base	30
100	595.00	Base	Chgo.
2 x 7	47.60	Base	5–40
8	54.40	Base	5–40
9	61.20	Base	5–40
10	68.00	Base	5–40
12	81.60	Base	5–40
48	326.40	Base	Chgo.
60	408.00	Base	30
72	489.60	Base	30
100	680.00	Base	Chgo.
2¼x 9	*68.85	.10	Chgo.

Widths 7" to 24" incl. are U. M. Plates.
*This size Open Hearth .20 to .30 Carbon.
△Inspected and stamped by American Bureau of Shipping.
†Also carried in St. Paul .35–.45 carbon.
X-Also carried in St. Paul .50–.60 carbon. } See Page 47.
Y-Also carried in St. Paul .80–.95 carbon. } See Page 47.
Z-Also carried in St. Paul Dead Soft.

SHEARED PLATES

OPEN HEARTH

.20 to .30 Carbon

Size, Inches	Weight per Lin. Ft., Pounds	Extra for Size	Lengths in Stock, Feet
2⅛x 48	346.80	.30	Pitts.
2¼x 48	367.20	.30	Chgo.
72	550.80	.30	20
100	765.00	.30	Chgo.
2½x 48	408.00	.30	Chgo.
72	612.00	.30	20
100	850.00	.30	Chgo.
2¾x 48	448.80	.30	Chgo.
72	673.20	.30	20
100	935.00	.30	Chgo.
3 x 48	489.60	.30	Chgo.
72	734.40	.30	20
100	1020.00	.30	Chgo.
3¼x 48	530.40	.30	Chgo.
72	795.60	.30	20
100	1105.00	.30	Chgo.
3½x 48	571.20	.30	Chgo.
72	856.80	.30	20
100	1190.00	.30	Chgo.
3¾x 48	612.00	.30	Chgo.
72	918.00	.30	20
4 x 48	652.80	.30	Chgo.
72	979.20	.30	20
100	1360.00	.30	Chgo.

Size, Inches	Weight per Lin. Ft., Pounds	Extra for Size	Lengths in Stock, Feet
4½x 48	734.40	.40	Chgo.
72	1101.60	.40	20
100	1530.00	.40	Chgo.
5 x 48	816.00	.40	Chgo.
72	1224.00	.40	20
100	1700.00	.40	Chgo.
5½x 48	897.60	.40	Chgo.
72	1346.40	.40	15
100	1870.00	.40	Chgo.
6 x 48	979.20	.40	Chgo.
72	1468.80	.40	15
100	2040.00	.40	Chgo.
6½x 48	1060.80	.40	Chgo.
72	1591.20	.40	Chgo.
7 x 48	1142.40	.40	Chgo.
60	1428.00	.40	New'k.
72	1713.60	.40	Chgo.
7½x 48	1224.00	.40	Pitts.
72	1836.00	.40	Chgo.
8 x 36	979.20	.40	New'k.
48	1305.60	.40	Pitts.
60	1632.00	.40	Chgo.
9 x 60	1836.00	.40	Chgo.
10 x 48	1632.00	.40	New'k.
60	2040.00	.40	Chgo.

For cutting extras, see pages 222 and 223.

COPPER STEEL PLATES

Size, Inches	Wt. per Lin. Foot, Pounds	Net Extra for Gage & Quality	Lengths in Stock, Feet
3/16x30 x36 x42 x48	See Hot Rolled Copper Steel Sheets Page 31		
x54	34.43	.45	5–30
x60	38.25	.45	5–30
x72	45.90	.45	5–30
x90	57.38	1.05	Pitts.
x96	61.20	1.05	New'k.
1/4x30	25.50	.25	5–40
x36	30.60	.25	5–40
x42	35.70	.25	5–40
x48	40.80	.25	5–40
x54	45.90	.25	5–40
x60	51.00	.25	5–40
x72	61.20	.25	5–40
x78	66.30	.25	Pitts.
x96	81.60	.25	New'k.
5/16x30	31.88	.25	5–40
x36	38.25	.25	5–40
x42	44.63	.25	5–40
x48	51.00	.25	5–40
5/16x54	57.38	.25	5–40
x60	63.75	.25	5–40
x72	76.50	.25	Chgo.
3/8x30	38.25	.25	5–40
x36	45.90	.25	5–40
x42	53.55	.25	5–40
x48	61.20	.25	5–40
x54	68.85	.25	5–40
x60	76.50	.25	5–40
x72	91.80	.25	Chgo.
x96	122.40	.25	New'k.
1/2x36	61.20	.25	Chgo.
x48	81.60	.25	Chgo.
x60	102.00	.25	Chgo.
x72	122.40	.25	Chgo.
x96	163.20	.25	New'k.
5/8x48	102.00	.25	Chgo.
x60	127.52	.25	Chgo.
x96	204.00	.25	New'k.
3/4x72	183.60	.25	Chgo.
x96	244.80	.25	New'k.

For Cutting Extras, see page 222.

HIGH CARBON OPEN HEARTH STEEL PLATES

.40 to .50 CARBON

Size, Inches	Wt. per Lin. Foot, Pounds	Extra for Gage & Quality	Lengths in Stock, Feet
3/16x60	38.25	.80	Pitts.
3/16x72	45.90	.80	5–30
1/4x60	51.00	.60	Pitts.
1/4x72	61.20	.60	5–40
5/16x60	63.75	.60	Pitts.
5/16x72	76.50	.60	5–40
3/8x60	76.50	.60	Pitts.
3/8x72	91.80	.60	5–40
7/16x72	107.10	.60	Chgo.
1/2x60	102.00	.60	Pitts.
1/2x72	122.40	.60	5–40
5/8x60	127.50	.60	Pitts.
5/8x72	214.20	.60	5–40
3/4x72	183.60	.60	5–40
7/8x72	214.20	.60	Chgo.
1 x48	163.20	.60	Pitts.
1 x72	244.80	.60	5–40
1 1/8x48	183.60	.60	Pitts.
1 1/8x72	275.40	.60	Chgo.
1 1/4x48	204.00	.60	Pitts.
1 1/4x72	306.00	.60	Chgo.
1 3/8x48	224.40	.60	Pitts.
1 3/8x72	336.60	.60	Chgo.
1 1/2x48	244.80	.60	Pitts.
1 1/2x72	367.20	.60	Chgo.
1 5/8x72	397.80	.60	Chgo.
1 3/4x48	285.60	.60	Chgo.
1 3/4x72	428.40	.60	Chgo.
2 x48	326.40	.60	Chgo.
2 x72	489.60	.60	Chgo.
2 1/4x48	367.20	.90	Chgo.
2 1/4x72	550.80	.90	Chgo.
2 1/2x48	408.00	.90	Chgo.
2 1/2x72	612.00	.90	Chgo.
2 3/4x48	448.80	.90	Chgo.
2 3/4x72	673.20	.90	Chgo.
3 x48	489.60	.90	Chgo.
3 x72	734.40	.90	Chgo.
3 1/4x48	534.40	.90	Chgo.
3 1/4x72	795.60	.90	Chgo.
3 1/2x48	571.20	.90	Chgo.
3 1/2x72	856.80	.90	Chgo.
3 3/4x48	612.00	.90	Chgo.
3 3/4x72	918.00	.90	Chgo.
4 x48	652.80	.90	Chgo.
4 x72	979.20	.90	Chgo.
4 1/2x48	734.40	1.00	Chgo.
4 1/2x72	1101.60	1.00	Chgo.
5 x48	816.00	1.00	Chgo.
5 x72	1224.00	1.00	Chgo.
5 1/2x48	897.60	1.00	Chgo.
5 1/2x72	1346.40	1.00	Chgo.
6 x48	979.20	1.00	Chgo.
6 x72	1468.80	1.00	Chgo.
7 x48	1142.40	1.00	Chgo.
7 x72	1713.60	1.00	Chgo.
8 x60	1632.00	1.00	Chgo.

Note—All above plates 1" and under cut to standard Sheared Plate widths without extra charge. Other widths, charge gross weight of nearest sheared plate width. Plates 24" and under, charge for shearing on weight of nearest universal plate width. For cutting extras, see pages 222 and 223.

FLANGE STEEL BOILER PLATES

IN OUR CHICAGO STOCK

55,000 to 65,000 T. S.

A. S. M. E.-SA-70-43 — A. S. T. M.-A-70-44

Size, Inches	Wt. per Lin. Foot, Pounds	Extra for Gage & Quality	Lengths in Stock, Feet	Size, Inches	Wt. per Lin. Foot, Pounds	Extra for Gage & Quality	Lengths in Stock, Feet
¼x 48	40.80	.25	5–40	½x 60	102.00	.25	5–40
x 60	51.00	.25	5–40	x 72	122.40	.25	5–40
x 72	61.20	.25	5–40	x 84	142.80	.25	Chgo.
x 84	71.40	.25	Chgo.	x 96	163.20	.25	Chgo.
x 96	81.60	.25	Chgo.	x120	204.00	.40	Chgo.
x120	102.00	.40	Chgo.	9/16x 48	91.80	.25	Chgo.
5/16x 48	51.00	.25	5–40	x 60	114.75	.25	Chgo.
x 60	63.75	.25	5–40	x 96	183.60	.25	Chgo.
x 72	76.50	.25	5–40	⅝x 60	127.50	.25	Chgo.
x 84	89.25	.25	5–40	x 72	153.00	.25	5–40
x 96	102.00	.25	5–40	x 84	178.50	.25	Chgo.
x120	127.50	.40	Chgo.	x 96	204.00	.25	Chgo.
⅜x 48	61.20	.25	5–40	¾x 60	153.00	.25	Chgo.
x 60	76.50	.25	5–40	x 72	183.60	.25	5–40
x 72	91.80	.25	5–40	x 84	214.20	.25	Chgo.
x 84	107.10	.25	5–40	x 96	244.80	.25	Chgo.
x 96	122.40	.25	5–40	⅞x 72	214.20	.25	Chgo.
x120	153.00	.40	Chgo.	1 x 72	244.80	.25	5–40
7/16x 72	107.10	.25	Chgo.	x 96	326.40	.25	Chgo.
x 84	124.95	.25	Chgo.	1⅛x 72	275.40	.25	Chgo.
x 96	142.80	.25	Chgo.	1¼x 72	306.00	.25	Chgo.
x120	178.50	.40	Chgo.	1½x 72	367.20	.25	Chgo.
½x 48	81.60	.25	5–40	1¾x 72	428.40	.25	Chgo.

FIREBOX STEEL BOILER PLATES

IN OUR CHICAGO STOCK

55,000 to 65,000 T. S.

A. S. M. E.-SA-70-43 — A. S. T. M.-A-70-44

Size, Inches	Wt. per Lin. Foot, Pounds	Extra for Gage & Quality	Lengths in Stock, Feet	Size, Inches	Wt. per Lin. Foot, Pounds	Extra for Gage & Quality	Lengths in Stock, Feet
3/16x60	38.25	.80	Pitts.	½x60	102.00	.60	Chgo.
¼x60	51.00	.60	Chgo.	72	122.40	.60	Chgo.
96	81.60	.60	5–30	96	163.20	.60	5–30
5/16x60	63.75	.60	Chgo.	120	204.00	.75	5–30
96	102.00	.60	5–30	9/16x96	183.60	.60	Chgo.
⅜x60	76.50	.60	Chgo.	⅝x72	153.00	.60	Chgo.
72	91.80	.60	Chgo.	96	204.00	.60	Chgo.
96	122.40	.60	5–30	¾x72	183.60	.60	New'k.
120	153.00	.75	5–30	84	214.20	.60	Chgo.
7/16x60	89.25	.60	Pitts.	96	244.80	.60	Chgo.
96	142.80	.60	5–30	⅞x72	214.20	.60	Chgo.

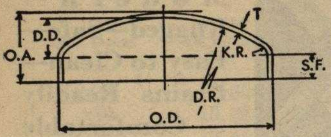
Our Flange and Firebox Steel Boiler Plates meet the requirements of the Hartford Steam Boiler Inspection & Insurance Co., A. S. M. E. Code and Chicago Code. We will furnish certificate of test when requested to do so on orders.

Note—All above plates 1″ and under cut to **Standard** Sheared Plate **widths** without extra charge. Other **widths,** charge gross weight of nearest sheared plate **width.** Plates 24″ and under charge for shearing on weight of nearest universal plate **width.** For other cutting extras, see pages 222 and 223.

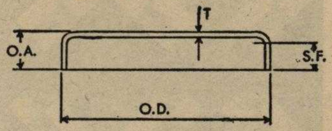
BOILER AND TANK HEADS

A. S. M. E. and Standard Types

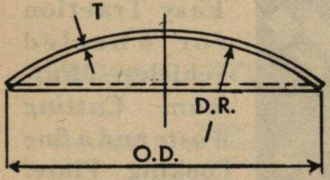
A. S. M. E. or Standard
Dished and Flanged



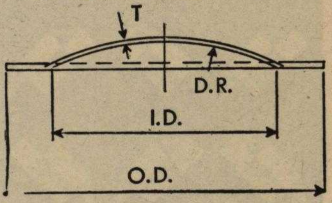
Flanged Only



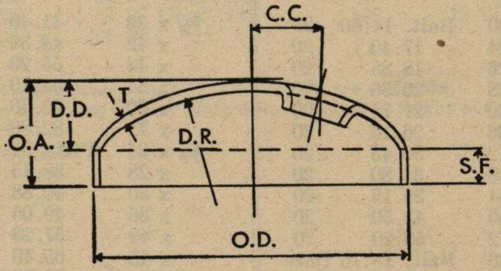
Dished Only



Dished and Flared



A.S.M.E. or Standard
Flanged and Dished with Manhole
Flanged In



Dimension of openings 9x14, 10x16, 11x15, or 18x22

Specify size and where opening is to be located.

A. S. M. E. heads will meet inspection by American Society of Mechanical Engineers or Hartford Steam Boiler Inspection and Insurance Co.

STANDARD heads, no inspection required. Used for low pressure work.

Other type heads and Stainless Steel Heads can also be furnished on order.

Dimensions Required for Ordering:

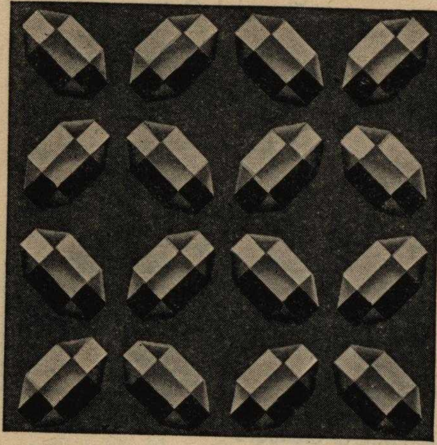
Thickness ------------------- T
Outside Diameter ------------ O.D.
Straight Flange -------------- S.F.
Dish Radius ----------------- D.R.
Knuckle Radius -------------- K.R.
Inside Diameter -------------- I.D.
Depth of Dish --------------- D.D.
Over All ------------------- O.A.
From Center of Head
to Center of Manhole ------- C.C.

For accessories such as Manhole Saddle Plates, Manheads, and Fittings, see page 141.

For Boiler and Tank Flanges see page 144.

"MULTIGRIP" FLOOR PLATES

Figure S-300



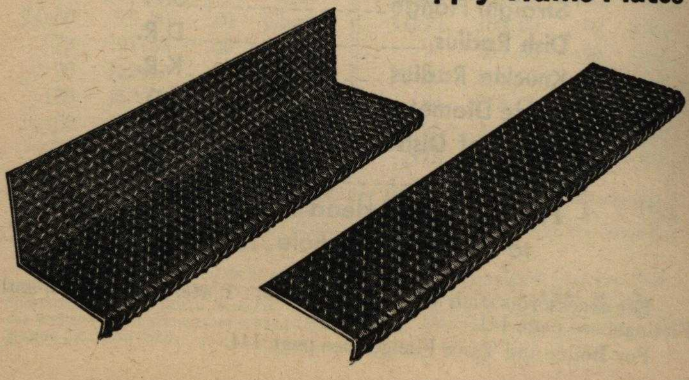
Modern—Rugged—Safe—Easy to Clean—Drains Readily—Comfortable Underfoot—Easy Traction for Wheeled Vehicles—*Minimum Cutting Waste* and a fine Looking Plate.

5-20′ LENGTHS

Size, Inches	Weight per Lineal Foot	Size Extra	Size, Inches	Weight per Lineal Foot	Size Extra
3/16 x 20	Balt. 14.50	.20	5/16 x 36	41.40	Base
x 24	17.40	.20	x 42	48.30	Base
x 26	18.85	.20	x 48	55.20	Base
x 28	20.30	.20	x 54	62.10	Base
x 30	21.75	.20	x 60	69.00	Base
x 36	26.10	.20	x 72	82.80	Base
x 42	30.45	.20	3/8 x 24	Pitts. 32.70	Base
x 48	34.80	.20	x 28	38.15	Base
x 54	39.15	.20	x 30	40.88	Base
x 60	43.50	.20	x 36	49.05	Base
x 72	52.20	.20	x 42	57.23	Base
1/4 x 20	Balt. 18.75	Base	x 48	65.40	Base
x 24	22.50	Base	x 54	73.58	Base
x 26	24.38	Base	x 60	81.75	Base
x 28	26.25	Base	x 72	98.10	Base
x 30	28.13	Base	1/2 x 24	New'k. 42.90	Base
x 36	33.75	Base	28	50.05	Base
x 42	39.38	Base	x 30	53.63	Base
x 48	45.00	Base	x 36	64.35	Base
x 54	50.63	Base	x 42	75.08	Base
x 60	56.25	Base	x 48	85.80	Base
x 72	67.50	Base	x 54	96.53	Base
5/16 x 24	Pitts. 27.60	Base	x 60	107.25	Base
x 28	32.20	Base	x 72	128.70	Base
x 30	34.50	Base	3/4 x 60	Chgo. 158.25	Base

For light pattern see page 25. Cutting extras page 222.
N. B.—Thickness of floor plate does not include height of lug.

We Form Stair Treads and Supply Traffic Plates



MULTIGRIP FLOOR PLATES

FIGURE S 300

Size, Inches	Weight per Lineal Foot	Lengths in Stock, Feet	Size, Inches	Weight per Lineal Foot	Lengths in Stock, Feet
⅛x24	12.30	Chgo. 20	⅛x42	21.53	Chgo. 20
x30	15.38	20	x48	24.60	20
x36	18.45	20	x60	30.75	Chgo. 20

SMALL PATTERN 4-WAY FLOOR PLATES

Size, Inches	Weight per Lineal Foot	Lengths in Stock, Feet	Size, Inches	Weight per Lineal Foot	Lengths in Stock, Feet
#12x24	10.50	10, 20	#14x42	13.13	Chgo. 12
x30	13.13	10, 20	x48	15.00	Chgo. 12
x36	15.75	10, 20	#16x24	6.00	8
x48	21.00	10, 20	x30	7.50	8
x60	26.25	Chgo. 30	x36	9.00	8, 12
#14x30	9.38	Chgo. 12	x48	12.00	St.P.12,20
x36	11.25	12			

For cutting extras, plates ⅛" and lighter, see page 224.
N. B.—Thickness of floor plate does not include height of lug.

FLOOR PLATES

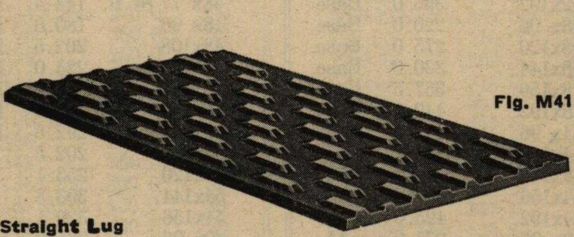


Fig. M41

Straight Lug

Carried at
Pittsburgh and Newark

CIRCLES AND RINGS

Furnished in any Thickness and Diameter Required

HOT ROLLED SHEETS

OPEN HEARTH — Prime Quality

No. 7 (3/16″) Wt. per Sq. Ft. 7.5 Lbs.

Inches Wide	Weight per lin. ft., Pounds	Extra for Size	Lengths in Stock, Feet	Inches Wide	Weight per lin. ft., Pounds	Extra for Size	Lenghts in Stock, Feet
14	8.75	Base	5-16	24	15.00	Base	5–16
15	9.38	Base	5–16	28	17.50	Base	5–16
16	10.00	Base	5–16	30	18.75	Base	5–16
18	11.25	Base	5–16	36	22.50	Base	5–16
20	12.50	Base	5–16	42	26.25	Base	5–16
22	13.75	Base	5–16	48	30.00	Base	5–16

For widths 12″ and narrower, see H. R. Strip. For widths over 48″, see U. M. and Sheared Plates. 3/16″ Sheets are cut to lengths 5′ and longer without extra charge. Use plate shearing extras, Page 222.

HOT ROLLED SHEETS

OPEN HEARTH — Prime Quality

No. 8 Gage and Lighter

Size U. S. Standard Gage and Inches	Weight Per Sheet, Pounds	Extra for Size
No. 8 (.1644″) Wt. per Sq. Ft. 6.875		
30x 96	137.5	Base
30x120	171.9	Base
30x144	206.3	Base
30x156	223.4	Base
30x192	275.0	Base
36x 96	165.0	Base
36x120	206.3	Base
36x144	247.5	Base
36x156	268.1	Base
36x192	330.0	Base
42x 96	192.5	Base
42x120	240.6	Base
42x144	288.8	Base
42x156	312.8	Base
42x192	385.0	Base
48x 96	220.0	Base
48x120	275.0	Base
48x144	330.0	Base
48x156	357.5	Base
48x192	440.0	Base
54x 96	247.5	.15
54x120	309.4	.15
54x144	371.3	.15
54x156	402.2	.15
54x192	495.0	.15
60x 96	275.0	.15
60x120	343.8	.15
60x144	412.5	.15
60x156	446.9	.15
60x192	550.0	.15
72x 96	330.0	.25
72x120	412.5	.25
72x144	495.0	.25
72x156	536.3	.25
72x192	660.0	.25
No. 10 (.1345″) Wt. per Sq. Ft. 5 .625		
24x 96	90.0	Base
24x120	112.5	Base
26x 96	97.5	Base
26x120	121.9	Base
28x 96	105.0	Base

Size U. S. Standard Gage and Inches	Weight Per Sheet, Pounds	Extra for Size
No. 10 (.1345″) Wt. per Sq. Ft. 5.625		
28x120	131.3	Base
30x 96	112.5	Base
30x120	140.6	Base
30x144 Pgh.	168.8	Base
36x 96	135.0	Base
36x108	151.9	Base
36x120	168.8	Base
36x144	202.5	Base
36x156	219.4	Base
40x 96 Chgo.	150.0	Base
40x120 Chgo.	187.5	Base
42x 96	157.5	Base
42x120	196.9	Base
42x144	236.3	Base
48x 77 St.P.	144.4	Base
48x 96	180.0	Base
48x108	202.5	Base
48x120	225.0	Base
48x138	258.8	Base
48x144	270.0	Base
48x156	292.5	Base
54x 96	202.5	.15
54x120	253.1	.15
54x144	303.8	.15
54x156	329.1	.15
60x 96	225.0	.15
60x120	281.3	.15
60x144	337.5	.15
60x156	365.6	.15
60x168	393.7	.15
60x192 New'k	450.0	.15
66x192 New'k	495.0	.20
72x 96	270.0	.25
72x120	337.5	.25
72x144	405.0	.25
72x156	438.8	.25
72x168	472.5	.25
72x192	540.0	.25
84x 96	315.0	.55
84x120	393.7	.55
84x144	472.5	.55
84x156 St.P.	511.9	.55
84x168 Chgo.	551.4	.55
84x192 Chgo.	630.0	.55

Continued on following page.

HOT ROLLED SHEETS

OPEN HEARTH

Prime Quality

No. 10 (.1345")
Wt. per
Sq. Ft. 5.625

Size U. S. Standard Gage and Inches	Weight Per Sheet, Pounds	Extra for Size
90x 96 Chgo.	337.5	.65
90x120 Chgo.	421.8	.65
90x144 Chgo.	506.2	.65
90x168 Chgo.	590.6	.65
90x192 Chgo.	674.9	.65

No. 11 (.1196")
Wt. per
Sq. Ft. 5.00

Size U. S. Standard Gage and Inches	Weight Per Sheet, Pounds	Extra for Size
24x 96 New'k	80.0	.05
24x120 Chgo.	100.0	.05
24x144 Chgo.	120.0	.05
30x 96 Pgh.	100.0	.05
30x120 Chgo.	125.0	.05
30x144 Chgo.	150.0	.05
36x 96	120.0	.05
36x120	150.0	.05
36x144	180.0	.05
42x 96	140.0	.05
42x120	175.0	.05
42x144 Chgo.	210.0	.05
48x 96	160.0	.05
48x120	200.0	.05
48x144	240.0	.05
54x 96 Pgh.	180.0	.20
54x120 Pgh.	225.0	.20
54x144 Chgo.	270.0	.20
60x 96	200.0	.20
60x120	250.0	.20
60x144	300.0	.20
60x192 Chgo.	400.0	.20
72x 96 New'k	240.0	.30
72x120	300.0	.30
72x144	360.0	.30
72x156 Chgo.	390.0	.30
72x168 Balt.	420.0	.30
72x192	480.0	.30

No. 12 (.1046")
Wt. per
Sq. Ft. 4.375

Size U. S. Standard Gage and Inches	Weight Per Sheet, Pounds	Extra for Size
24x 96	70.0	.10
24x120	87.5	.10
24x144 St.P.	105.0	.10
24x156 St.P.	113.8	.10
26x 96	75.8	.10
26x120	94.8	.10
28x 96	81.7	.10
28x120	102.1	.10
30x 96	87.5	.10
30x120	109.4	.10
30x144 Pgh.	131.3	.10
36x 77 St.P.	84.2	.10
36x 96	105.0	.10

No. 12 (.1046")
Wt. per
Sq. Ft. 4.375

Size U. S. Standard Gage and Inches	Weight Per Sheet, Pounds	Extra for Size
36x108	118.1	.10
36x120	131.3	.10
36x144	157.5	.10
36x156 St.P.	170.7	.10
40x 96 Chgo.	116.7	.10
40x120 Chgo.	145.8	.10
42x 96	122.5	.10
42x120	153.1	.10
42x144	183.8	.10
48x 77 St.P.	112.3	.10
48x 96	140.0	.10
48x108	157.5	.10
48x120	175.0	.10
48x144	210.0	.10
48x156	227.5	.10
54x 77 St.P.	126.3	.25
54x 96	157.5	.25
54x120	196.9	.25
54x144	236.3	.25
54x156	255.9	.25
60x 77 St.P.	140.4	.25
60x 96	175.0	.25
60x120	218.8	.25
60x144	262.5	.25
60x156	284.4	.25
60x168 Chgo.	306.3	.25
60x192 New'k	350.0	.25
72x 96	210.0	.35
72x120	262.5	.35
72x144	315.0	.35
72x156	341.2	.35
72x168	367.6	.35
72x192	420.0	.35
84x 96	245.0	.70
84x120	306.2	.70
84x144	367.5	.70
84x168 Chgo.	428.8	.70
84x192	490.0	.70

No. 14 (.0747")
Wt. per
Sq. Ft. 3.125

Size U. S. Standard Gage and Inches	Weight Per Sheet, Pounds	Extra for Size
24x 96	50.0	.20
24x120	62.5	.20
24x144 St.P.	75.0	.20
24x156 St.P.	81.3	.20
26x 96	54.2	.20
26x120	67.7	.20
28x 96	58.3	.20
28x120	72.9	.20
30x 96	62.5	.20
30x120	78.1	.20
30x144	93.7	.20
36x 77 St.P.	60.2	.20

For cutting extras, see page 224.

Continued on following page.

HOT ROLLED SHEETS

OPEN HEARTH

Prime Quality

Size U. S. Standard Gage and Inches	Weight Per Sheet, Pounds	Extra for Size
No. 14 (.0747″) Wt. per Sq. Ft. 3.125		
36x 96	75.0	.20
36x120	93.8	.20
36x144	112.5	.20
36x156 St.P.	121.9	.20
40x 96	83.3	.20
40x120	104.2	.20
42x 96	87.5	.20
42x120	109.4	.20
42x144	131.3	.20
48x 77 St.P.	80.2	.20
48x 96	100.0	.20
48x120	125.0	.20
48x144	150.0	.20
48x156	162.5	.20
54x 96	112.5	.35
54x120	140.6	.35
54x144	168.8	.35
54x156	182.8	.35
60x 96	125.0	.35
60x120	156.3	.35
60x144	187.5	.35
60x168 Chgo.	218.8	.35
†*72x 96 New'k	150.0	...
*72x120	187.5	.75
*72x144	225.0	.75
No. 16 (.0598″) Wt. per Sq. Ft. 2.50		
24x 96	40.0	.45
24x120	50.0	.45
24x144 St.P.	60.0	.45
24x156 St.P.	65.0	.45
26x 96	43.3	.45
26x120	54.2	.45
28x 96	46.7	.45
28x120	58.3	.45
30x 96	50.0	.45
30x120	62.5	.45
30x144 Pgh.	75.0	.45
36x 77 St.P.	48.1	.45
36x 96	60.0	.45
36x120	75.0	.45
36x144	90.0	.45
36x156 St.P.	97.5	.45
40x 96 Chgo.	66.7	.45
40x120 Chgo.	83.3	.45
42x 96	70.0	.45
42x120	87.5	.45
42x144	105.0	.45
48x 77 St.P.	64.2	.45
48x 96	80.0	.45
48x120	100.0	.45
48x144	120.0	.45
48x156	130.0	.45
54x 96	90.0	.50
54x120	112.5	.50
No. 16 (.0598″) Wt. per Sq. Ft. 2.50		
54x144	135.0	.50
54x156	146.3	.50
60x 96	100.0	.50
60x120	125.0	.50
60x144	150.0	.50
60x168 Chgo.	175.0	.50
*72x 96 Chgo.	120.0	1.00
*72x120	150.0	1.00
*72x144	180.0	1.00
No. 18 (.0478″) Wt. per Sq. Ft. 2.00		
24x 96	32.0	.60
24x120	40.0	.60
26x 96	34.7	.60
26x120	43.3	.60
28x 96	37.3	.60
28x120	46.7	.60
30x 96	40.0	.60
30x108 St.P.	45.0	.60
30x120	50.0	.60
36x 96	48.0	.60
36x120	60.0	.60
40x 96 New'k	53.3	.60
40x120 New'k	66.7	.60
42x 96	56.0	.60
42x120	70.0	.60
48x 96	64.0	.60
48x120	80.0	.60
No. 20 (.0359″) Wt. per Sq. Ft. 1.50		
24x 96	24.0	.80
24x120	30.0	.80
26x 96	26.0	.80
26x120	32.5	.80
28x 72	21.0	.80
28x 84	24.5	.80
28x 96	28.0	.80
28x108	31.5	.80
28x120	35.0	.80
30x 96	30.0	.80
30x120	37.5	.80
36x 72 New'k	27.0	.80
36x 96	36.0	.80
36x120	45.0	.80
42x 72 New'k	31.5	.80
42x 96	42.0	.80
42x120	52.5	.80
48x 72 New'k	36.0	.80
48x 96	48.0	.80
48x120	60.0	.80
48x144 New'k	72.0	.90
60x120 New'k	75.0	1.00

*We also have these sizes stretcher leveled extra **25c** per 100 lbs.

†Subject to a size and strecher level extras **1.50** per 100 lbs.

Concluded on following page.

HOT ROLLED SHEETS
OPEN HEARTH
Prime Quality

Size U. S. Standard Gage and Inches	Weight Per Sheet, Pounds	Extra for Size
No. 22 (0.299″) Wt. per Sq. Ft. 1.25		
24x 96	20.0	.85
24x120	25.0	.85
26x 96	21.7	.85
26x120	27.1	.85
28x 72	17.5	.85
28x 84	20.4	.85
28x 96	23.3	.85
28x108 Chgo.	26.3	.85
28x120 Chgo.	29.2	.85
30x 96	25.0	.85
30x120	31.3	.85
36x 96	30.0	.85
36x120	37.5	.85
42x 96	35.0	.95
42x120	43.8	.95
48x 96	40.0	1.05
48x120	50.0	1.05
No. 24 (.0239″) Wt. per Sq. Ft. 1.00		
24x 96	16.0	.90
24x120	20.0	.90
26x 96	17.3	.90
26x120 Chgo.	21.7	.90
28x 72 Chgo.	14.0	.90
28x 84 Chgo.	16.3	.90
28x 96 Chgo.	18.7	.90
28x108 Chgo.	21.0	.90
28x120 Chgo.	23.3	.90
30x 96	20.0	.90
30x120	25.0	.90
36x 96	24.0	.90
36x120	30.0	.90
42x 96	28.0	1.10
42x120	35.0	1.10
48x 96	32.0	1.20
48x120	40.0	1.20
No. 26 (.0179″) Wt. per Sq. Ft. .75		
24x 96	12.0	1.00
24x120	15.0	1.00
No. 26 (.0179″) Wt. per Sq. Ft. .75		
26x 96 Chgo.	13.0	1.00
26x120 Chgo.	16.3	1.00
28x 72 Chgo.	10.5	1.00
28x 84 Chgo.	12.3	1.00
28x 96 Chgo.	14.0	1.00
28x108 Chgo.	15.8	1.00
28x120 Chgo.	17.5	1.00
30x 96	15.0	1.00
30x120	18.8	1.00
36x 96	18.0	1.10
36x120	22.5	1.10
42x 96	21.0	1.40
42x120	26.3	1.40
No. 27 (.0164″) Wt. per Sq. Ft. .6875		
30x 96 St.P.	13.8	1.05
No. 28 (.0149″) Wt. per Sq. Ft. .625		
24x 96	10.0	1.10
24x120	12.5	1.10
26x 96 St.P.	10.8	1.10
28x 72 Chgo.	8.8	1.10
28x 84 Chgo.	10.2	1.10
28x 96 Chgo.	11.7	1.10
28x108 Chgo.	13.1	1.10
28x120 Chgo.	14.6	1.10
28x144 Chgo.	17.5	1.20
30x 96	12.5	1.10
30x120	15.6	1.10
36x 96	15.0	1.30
36x120	18.8	1.30
40x 96 New'k	16.7	1.50
No. 30 (.0120″) Wt. per Sq. Ft. .50		
24x 96	8.0	1.40
28x 96 New'k	9.0	1.40
30x 96	10.0	1.40
36x 96	12.0	1.50

For cutting extras see page 224.

FOR

COR - TEN

BEAMS, CHANNELS, ANGLES,
PLATES AND SHEETS

See Pages 102 and 103.

MAN - TEN

BEAMS, CHANNELS, ANGLES,
PLATES AND SHEETS

See Pages 104 and 105.

HIGH CARBON

HOT ROLLED SHEETS

OPEN HEARTH

.40-.50 CARBON

No. 7 (3/16″) Wt. per Sq. Ft. 7.5 Lbs.

IN OUR CHICAGO STOCK

Inches Wide	Weight per lin. ft., Pounds	Add to Base Base Price of Regular Hot Rolled	Length in Stock, Feet
24	15.00	.60	5–16
30	18.75	.60	5–16
36	22.50	.60	5–16
42	26.25	.60	5–16
48	30.00	.60	5–16

Lengths 5 ft. and longer cut without extra charge.
Use plate shearing extras, page 222.

HIGH CARBON

HOT ROLLED SHEETS

OPEN HEARTH

.40-.50 CARBON

No. 10 GAGE and LIGHTER

IN OUR CHICAGO STOCK

Size U. S. Standard Gage and Inches	Weight Per Sheet, Pounds	Add to Base Price of Regular Hot Rolled
No. 10 (.1345″) Wt. per Sq. Ft. 5.625		
24x 96	90.0	.60
24x120	112.5	.60
30x 96	112.5	.60
30x120	140.6	.60
36x 96	135.0	.60
36x120	168.8	.60
36x144	202.5	.60
36x192	270.0	.60
42x 96	157.5	.60
42x120	196.9	.60
42x144	236.3	.60
48x 96	180.0	.60
48x120	225.0	.60
48x144	270.0	.60
48x192	360.0	.60
60x 96	225.0	.75
60x120	281.3	.75
60x144	337.5	.75
72x 96	270.0	.85
72x120	337.5	.85
72x144	405.0	.85
72x192	540.0	.85
84x 96	315.0	1.15
84x120	393.8	1.15
84x144	472.6	1.15
84x192	630.0	1.15
No. 12 (.1046″) Wt. per Sq. Ft. 4.375		
24x120	87.5	.70
30x 96	87.5	.70
30x120	109.4	.70
36x 96	105.0	.70
36x120	131.3	.70
42x120	153.1	.70
48x 96	140.0	.70
48x120	175.0	.70
60x 96	175.0	.85
60x120	218.8	.85
60x144	262.5	.85
60x192	350.0	.85
72x 96	210.0	.95
72x120	262.5	.95
72x192	420.0	.95
No. 16 (.0598″) Wt. per Sq. Ft. 2.50		
24x120	50.0	1.05
36x108	67.5	1.05
48x120	100.0	1.05

No. 10 gage and lighter, see cutting extras page 224.

COPPER STEEL HOT ROLLED SHEETS
OPEN HEARTH IN OUR CHICAGO STOCK

No. 7 ($\frac{3}{16}$″) Wt. per Sq. Ft. 7.5 Lbs.

Inches Wide	Weight per lin. ft., Pounds	Add to Base Price of Regular Hot Rolled	Length in Stock, Feet	Inches Wide	Weight per lin. ft., Pounds	Add to Base Price of Regular Hot Rolled	Length in Stock, Feet
30x192	18.75	.25	5–16	42x192	26.25	.25	5–16
36x192	22.50	.25	5–16	48x192	30.00	.25	5–16

Lengths 5 ft. and longer cut without extra charge.

COPPER STEEL HOT ROLLED SHEETS
OPEN HEARTH IN OUR CHICAGO STOCK
No. 8 GAGE and LIGHTER

Size U. S. Standard Gage and Inches	Weight per Sheet, Pounds	Add to Base Price of Regular Hot Rolled
No. 8 (.1644″) Wt. per Sq. Ft. 6.875		
30x 96	137.5	.25
30x120	171.9	.25
30x144	206.3	.25
30x156	223.4	.25
30x192	275.0	.25
36x 96	165.0	.25
36x120	206.3	.25
36x144	247.5	.25
36x156	268.1	.25
36x192	330.0	.25
48x 96	220.0	.25
48x120	275.0	.25
48x144	330.0	.25
48x156	357.5	.25
48x192	440.0	.25
60x 96	275.0	.40
60x120	343.8	.40
60x144	412.5	.40
60x156	446.9	.40
60x192	550.0	.40
72x 96	330.0	.50
72x120	412.5	.50
72x144	495.0	.50
72x156	536.3	.50
72x192	660.0	.50
No. 10 (.1345″) Wt. per Sq. Ft. 5.625		
24x 96	90.0	.25
24x120	112.5	.25
30x 96	112.5	.25
30x120	140.6	.25
36x 96	135.0	.25
36x120	168.8	.25
42x 96	157.5	.25
42x120	196.9	.25
48x 96	180.0	.25
48x120	225.0	.25
48x156	292.5	.25
54x 96	202.5	.40
54x120	253.1	.40
54x156	329.1	.40
60x 96	225.0	.40
60x120	281.3	.40
60x156	365.6	.40
72x120	337.5	.50
72x156	438.8	.50
No. 12 (.1046″) Wt. per Sq. Ft. 4.375		
24x 96	70.0	.35
24x120	87.5	.35
30x 96	87.5	.35
30x120	109.4	.35
No. 12 (.1046″) Wt. per Sq. Ft. 4.375		
36x 96	105.0	.35
36x120	131.3	.35
42x 96	122.5	.35
42x120	153.1	.35
48x 96	140.0	.35
48x120	175.0	.35
48x156	227.5	.35
54x 96	157.5	.50
54x120	196.9	.50
54x156	255.9	.50
60x 96	175.0	.50
60x120	218.8	.50
60x156	284.4	.50
No. 14 (.0747″) Wt. per Sq. Ft. 3.125		
24x 96	50.0	.45
24x120	62.5	.45
30x 96	62.5	.45
30x120	78.1	.45
36x 96	75.0	.45
36x120	93.8	.45
42x 96	87.5	.45
42x120	109.4	.45
48x 96	100.0	.45
48x120	125.0	.45
48x156	162.5	.45
54x 96	112.5	.60
54x120	140.6	.60
54x156	182.8	.60
60x 96	125.0	.60
60x120	156.3	.60
60x156	203.1	.60
No. 16 (.0598″) Wt. per Sq. Ft. 2.50		
24x 96	40.0	.70
24x120	50.0	.70
30x 96	50.0	.70
30x120	62.5	.70
36x 96	60.0	.70
36x120	75.0	.70
42x 96	70.0	.70
42x120	87.5	.70
48x 96	80.0	.70
48x120	100.0	.70
48x156	130.0	.70
54x 96	90.0	.75
54x120	112.5	.75
54x156	146.3	.75
60x 96	100.0	.75
60x120	125.0	.75
60x156	162.5	.75

No. 8 gage and lighter see cutting extras page 224.

COLD ROLLED STEEL SHEETS

WHITE FINISH - OILED

Prime Quality

Free from scale. Suitable for paint, lacquer and enamel finishes and plating. While not a drawing stock this material will stand simple forming and drawing.

Size U. S. Standard Gage and Inches	Weight Per Sheet, Pounds	Extra for Size
No. 7 (3-16″) Wt. per Sq. Ft. 7.50		
24x 96 Chgo.	120.0	+.85
36x 96 Chgo.	180.0	+.85
36x120 Chgo.	225.0	+.85
No. 10 (.1345″) Wt. per Sq. Ft. 5.625		
24x 96 Chgo.	90.0	+.85
30x 96 Chgo.	112.5	+.85
36x 96 Chgo.	135.0	+.85
36x120	168.8	+.85
48x120	225.0	+.85
48x144 Chgo.	270.0	+.85
No. 11 (.1196″) Wt. per Sq. Ft. 5.0		
24x 96 Chgo.	80.0	+.85
36x 96	120.0	+.85
36x120 Chgo.	150.0	+.85
48x120	200.0	+.85
No. 12 (.1046″) Wt. per Sq. Ft. 4.375		
24x 96 Chgo.	0.70	+.35
36x 96 Chgo.	105.0	+.35
36x120 Chgo.	131.3	+.35
48x 96 Chgo.	140.0	+.35
48x120	175.0	+.35
No. 14 (.0747″) Wt. per Sq. Ft. 3.125		
24x 96 Chgo.	50.0	—.15
30x 96 Chgo.	62.5	—.15
30x120 Chgo.	78.1	—.15
36x 96 Chgo.	75.0	—.15
36x120	93.8	—.15
48x120 Chgo.	125.0	—.15
48x144	150.0	—.15
No. 15 (.0673″) Wt. per Sq. Ft. 2.813		
24x 96 Chgo.	45.0	—.10
36x 96 Chgo.	67.5	—.10
No. 16 (.0598″) Wt. per Sq. Ft. 2.5		
24x 96 Chgo.	40.0	—.05
30x 96	50.0	—.05
36x 96	60.0	—.05
36x120	75.0	—.05
48x120	100.0	—.05
48x144	120.0	—.05
No. 17 (.0538″) Wt. per Sq. Ft. 2.25		
24x 96 Chgo.	36.0	Base

Size U. S. Standard Gage and Inches	Weight Per Sheet, Pounds	Extra for Size
No. 18 (.0478″) Wt. per Sq. Ft. 2.0		
24x 96 Chgo.	32.0	+.05
24x120 Chgo.	40.0	+.05
30x 96	40.0	+.05
36x 96	48.0	+.05
36x120	60.0	+.05
42x120 Chgo.	70.0	+.05
48x120 Chgo.	80.0	+.05
No. 19 (.0418″) Wt. per Sq. Ft. 1.75		
24x 96 Chgo.	28.0	+.10
36x 96 Chgo.	43.0	+.10
36x120 Chgo.	54.0	+.10
No. 20 (.0359″) Wt. per Sq. Ft. 1.5		
24x 96	24.0	+.15
30x 96	30.0	+.15
36x 96	36.0	+.15
36x120	45.0	+.15
36x144 Chgo.	54.0	+.15
42x144 Chgo.	63.0	+.15
48x 96 Chgo.	48.0	+.15
48x120 Chgo.	60.0	+.15
48x144 Chgo.	72.0	+.15
No. 21 (.0329″) Wt. per Sq. Ft. 1.375		
24x 96 Chgo.	22.0	+.20
No. 22 (.0299″) Wt. per Sq. Ft. 1.25		
24x 96	20.0	+.25
30x 96	25.0	+.25
36x 96	30.0	+.25
36x120	37.5	+.40
42x144 Chgo.	52.5	+.60
48x 96 Chgo.	40.0	+.45
48x120 Chgo.	50.0	+.60
No. 24 (.0239″) Wt. per Sq. Ft. 1.0		
24x 96	16.0	+.45
30x 96	20.0	+.45
36x 96	24.0	+.45
36x120	30.0	+.65
No. 26 (.0179″) Wt. per Sq. Ft. 0.75		
24x 96 Chgo.	12.0	+.55
30x 96	15.0	+.55
36x 96 Chgo.	18.0	+.65
36x120 Chgo.	22.5	+.85
No. 28 (.0149″) Wt. per Sq. Ft. 0.625		
24x 96 New'k.	10.0	+.70
30x 96	12.5	+.70
No. 30 (.0120″) Wt. per Sq. Ft. 0.5		
24x 96 New'k.	8.0	+.95
30x 96	10.0	+.95

For crating extras, see page 225. Cutting extras, page 224.

COLD ROLLED STEEL SHEETS

STRETCHER LEVELED AND RESQUARED

WHITE FINISH-OILED

Prime Quality

Free from scale. Suitable for Furniture, for Automobile work, Truck Panels and Panels of any kind requiring flatness and a fine finish, for Lockers, Tabletops, Partitions, Shelving, etc. Can be painted, enameled or plated and will stand simple forming and drawing.

Size U. S. Standard Gage and Inches	Weight Per Sheet, Pounds	Extra for Size
No. 10 (.1345") Wt. per Sq. Ft. 5.625		
24x120 Chgo.	112.5	+.85
36x 96 Chgo.	135.0	+.85
36x120	168.8	+.85
48x 96 Chgo.	180.0	+.85
48x120	225.0	+.85
48x144 Chgo.	270.0	+.85
No. 11 (.1196") Wt. per Sq. Ft. 5.0		
36x 96	120.0	+.85
36x120 Chgo.	150.0	+.85
48x120	200.0	+.85
60x144 Chgo.	300.0	+.95
No. 12 (.1046") Wt. per Sq. Ft. 4.375		
36x 96 Chgo.	105.0	+.35
36x120	131.3	+.35
42x120 Chgo.	153.1	+.35
48x120	175.0	+.35
48x144 Balt.	210.0	+.35
No. 14 (.0747") Wt. per Sq. Ft. 3.125		
24x120	62.5	—.15
30x 96	62.5	—.15
30x120 Chgo.	78.1	—.15
36x 96 Chgo.	75.0	—.15
36x120	93.8	—.15
48x120	125.0	—.15
48x144 Chgo.	150.0	—.15
72x120 Chgo.	187.5	+.20
72x144 Chgo.	225.0	+.20
No. 16 (.0598") Wt. per Sq. Ft. 2.5		
24x 96 Chgo.	40.0	—.05
24x120	50.0	—.05
30x 96	50.0	—.05
30x120	62.5	—.05
36x 96	60.0	—.05
36x120	75.0	—.05
36x144 Chgo.	90.0	—.05
48x120	100.0	—.05
48x144	120.0	—.05
54x120	112.5	Base
60x144	150.0	Base
72x120 Chgo.	150.0	+.40
72x144 Chgo.	180.0	+.40
No. 18 (.0478") Wt. per Sq. Ft. 2.0		
24x 96 Chgo.	32.0	+.05
24x120	40.0	+.05
30x 96 Chgo.	40.0	+.05
30x120 Chgo.	50.0	+.05
36x 96	48.0	+.05
36x120	60.0	+.05
36x144	72.0	+.05
No. 18 (.0478") Wt. per Sq. Ft. 2.0		
42x144	84.0	+.05
48x 96	64.0	+.05
48x120	80.0	+.05
48x144	96.0	+.05
54x156	117.0	+.10
No. 20 (.0359") Wt. per Sq. Ft. 1.5		
24x 96	24.0	+.15
24x120 Chgo.	30.0	+.15
30x 96	30.0	+.15
30x120 Chgo.	37.5	+.15
36x 96 Chgo.	36.0	+.15
36x120	45.0	+.15
36x144	54.0	+.15
36x156 Balt.	58.5	+.15
*36x168 Chgo.	63.0	+.30
42x 96	42.0	+.15
42x120 Chgo.	52.5	+.15
42x144	63.0	+.15
42x156 Balt.	68.3	+.15
48x 96	48.0	+.15
48x120	60.0	+.15
48x144	72.0	+.15
48x156	78.0	+.15
*48x168 Chgo.	84.0	+.30
60x144 Balt.	90.0	+.35
No. 22 (.0299") Wt. per Sq. Ft. 1.25		
24x 96	20.0	+.25
24x120	25.0	+.40
30x 96	25.0	+.25
30x120 Chgo.	31.3	+.40
36x 96	30.0	+.25
36x120	37.5	+.40
36x144	45.0	+.50
42x 96 Chgo.	35.0	+.35
42x120 Chgo.	43.8	+.50
42x144	52.5	+.60
48x 96	40.0	+.90
48x120	50.0	+1.20
48x144	60.0	+1.40
No. 24 (.0239") Wt. per Sq. Ft. 1.0		
24x 96 Chgo.	16.0	+.45
30x 96 Chgo.	20.0	+.45
30x120 Chgo.	25.0	+.65
36x 96 Chgo.	24.0	+.45
36x120 Chgo.	30.0	+.65
No. 26 (.0179") Wt. per Sq. Ft. .75		
30x 96 Chgo.	15.0	+.55
36x 96 Chgo.	18.0	+.65
42x144 Chgo.	31.5	+2.50

* These sizes are not resquared.

COLD ROLLED STEEL SHEETS

DEEP DRAWING

WHITE FINISH - OILED

Prime Quality

IN OUR CHICAGO STOCK

Finest quality for light or deep drawing, stamping, forming and spinning. Free from scale, suitable for painting, enameling or plating.

Size U. S. Standard Gage	Weight Per Sheet, Pounds	Extra for Size
No. 7 (3-16″) Wt. per Sq. Ft. 7.5		
24x 96	120.0	+.85
30x 96	150.0	+.85
No. 10 (.1345″) Wt. per Sq. Ft. 6.25		
24x 96	90.0	+.85
36x 96	135.0	+.85
36x120	168.8	+.85
48x 96	180.0	+.85
48x120	225.0	+.85
No. 12 (.1046″) Wt. per Sq. Ft. 4.375		
24x 96	70.0	+.35
24x120	87.5	+.35
48x120	175.0	+.35
No. 14 (.0747″) Wt. per Sq. Ft. 3.125		
24x 96	50.0	—.15
30x 96	62.5	—.15
36x120	93.8	—.15
No. 15 (.0673″) Wt. per Sq. Ft. 2.8125		
24x 96	45.0	—.10
30x 96	56.3	—.10
No. 16 (.0598″) Wt. per Sq. Ft. 2.5		
24x 96	40.0	—.05
30x 96	50.0	—.05
36x 96	60.0	—.05
36x120	75.0	—.05
No. 17 (.0558″) Wt. per Sq. Ft. 2.25		
24x 96	36.0	Base
No. 18 (.0478″) Wt. per Sq. Ft. 2.0		
24x 96	32.0	+.05
30x 96	40.0	+.05
36x 96	48.0	+.05
36x120	60.0	+.05
No. 19 (.0418″) Wt. per Sq. Ft. 1.75		
24x 96	28.0	+.10
30x 96	35.0	+.10
No. 20 (.0359″) Wt. per Sq. Ft. 1.5		
24x 96	24.0	+.15
30x 96	30.0	+.15
36x 96	36.0	+.15
36x120	37.5	+.15
No. 21 (.0329″) Wt. per Sq. Ft. 1.375		
24x 96	22.0	+.20
No. 22 (.0299″) Wt. per Sq. Ft. 1.25		
24x 96	20.0	+.25
30x 96	25.0	+.25
36x 96	30.0	+.25
36x120	37.5	+.40
No. 24 (.0239″) Wt. per Sq. Ft. 1.0		
24x 96	16.0	+.45
30x 96	20.0	+.45
36x 96	24.0	+.45
36x120	30.0	+.65
No. 26 (.0179″) Wt. per Sq. Ft. .75		
24x 96	12.0	+.55
30x 96	15.0	+.55
36x120	22.5	+.85
No. 28 (.0149″) Wt. per Sq. Ft. .625		
36x 96	15.0	+.95

For

STAINLESS STEEL SHEETS

See pages 110 and 111

VITRENAMEL SHEETS

A HIGH GRADE STOCK FOR VITREOUS ENAMELING

PRIME QUALITY

Soft and while not a drawing stock, will stand considerable forming. Perfect for Stoves, Refrigerators, Tables, Restaurant and Dairy Equipment, Washing Machines, Cooking Utensils, Wall Tile, Signs, Sinks and many other applications.

Size U.S. Standard Gage and Inches	Weight per Sheet, Pounds	Extra for Size
No. 16 (.0598") Wt. per Sq. Ft. 2.5		
30x120	62.5	—.20
36x 96	60.0	—.20
36x120	75.0	—.20
No. 18 (.0478") Wt. per Sq. Ft. 2.0		
24x 96	32.0	—.10
24x120	40.0	—.10
30x 96	40.0	—.10
30x120	50.0	—.10
36x 96	48.0	—.10
36x120	60.0	—.10
42x120	70.0	—.10
48x 96	64.0	—.10
48x120	80.0	—.10
No. 20 (.0359") Wt. per Sq. Ft. 1.5		
24x 96	24.0	Base
24x120	30.0	Base
30x 96	30.0	Base
30x120	37.5	Base
No. 20 (.0359") Wt. per Sq. Ft. 1.5		
36x 96	36.0	Base
36x120	45.0	Base
42x120	52.5	Base
48x120	60.0	Base
No. 22 (.0299") Wt. per Sq. Ft. 1.25		
24x 96	20.0	+.10
24x120	25.0	+.10
30x 96	25.0	+.10
30x120	31.25	+.10
36x 96	30.0	+.10
36x120	37.5	+.10
No. 24 (.0239") Wt. per Sq. Ft. 1.0		
24x 96	16.0	+.30
24x120	20.0	+.50
30x 96	20.0	+.30
30x120	25.0	+.50
36x120	30.0	+.50

We Solicit

Your Inquiries For

SHEET METAL WORKERS

MACHINERY

ELECTRICAL SHEETS

IN OUR CHICAGO STOCK

For Transformers, Generators, Motors and Other Electrical Apparatus

The Core Loss shown is the guaranteed maximum core loss in watts per pound at 10,000 gausses and 60 cycles.

ARMATURE

Suitable for fractional horse power motors, pole laminations and rotating machines operating at high inductions. Silicon content about ⅔ per cent.

SIZE U. S. STANDARD GAGE AND INCHES	Extra for Size	Core Loss	Est. Wt. per Sheet, Lbs.
No. 24 (.025″) x 30 x 120..........	Base	1.98	25.00

ELECTRICAL

A high grade sheet for generators and motors of small and medium size. Slight aging. Low losses. Silicon content about 1¼ per cent.

SIZE U. S. STANDARD GAGE AND INCHES	Extra for Size	Core Loss	Est. Wt. per Sheet, Lbs.
No. 22 (.031″) x 30 x 120.........	—.05	2.17	31.25
No. 24 (.025″) x 30 x 120.........	Base	1.70	25.00
No. 26 (.0185″) x 30 x 108.........	+.20	1.35	16.87
No. 28 (.015″) x 30 x 108.........	+.40	1.23	14.06
No. 29 (.014″) x 30 x 108.........	+.50	1.17	12.66

MOTOR

A sheet intermediate to Electrical and Dynamo grades, for good efficiency generators, motors, radio power transformers and fluorescent ballast units. Silicon content about 2¾ per cent.

SIZE U. S. STANDARD GAGE AND INCHES	Extra for Size	Core Loss	Est. Wt. per Sheet, Lbs.
No. 26 (.0185″) x 30 x 108.........	+.20	1.14	16.87

DYNAMO

A medium high silicon grade for small power transformers and rotating machines. Silicon content about 3¼ per cent.

SIZE U. S. STANDARD GAGE AND INCHES	Extra for Size	Core Loss	Est. Wt. per Sheet, Lbs.
No. 26 (.0185″) x 30 x 108.........	+.20	.94	16.87
No. 29 (.014″) x 30 x 108.........	+.55	.82	12.66

TRANSFORMER 72

High silicon grade for transformers and rotating machines. Non-aging. Low core losses. Suitable for punching or shearing. Silicon content about 3¾ per cent.

SIZE U. S. STANDARD GAGE AND INCHES	Extra for Size	Core Loss	Est. Wt. per Sheet, Lbs.
No. 26 (.0185″) x 30 x 108.........	+.20	.83	16.87
No. 29 (.014″) x 30 x 108.........	+.55	.72	12.66

TRANSFORMER 58 (Punching Quality)

For high efficiency transformers and rotating machines. Suitable for punching or shearing laminations.

SIZE U. S. STANDARD GAGE AND INCHES	Extra for Size	Core Loss	Est. Wt. per Sheet, Lbs.
No. 29 (.014″) x 30 x 108..........	+.55	.58*	12.66

(*)Weighted average maximum core loss; maximum core loss any lift .62.

For cutting extras see page 224.

COPPER STEEL GALVANIZED SHEETS

Prime Quality

Size U. S. Standard Gage and Inches	Weight Per Sheet, Pounds	Net Extra for Size and Quality
No. 10 Wt. per Sq. Ft. 5.781		
30x 96	115.60	—.25
30x120 Chgo.	144.50	—.25
36x 96	138.80	—.25
36x120 Chgo.	173.40	—.25
42x 96 Chgo.	161.80	—.20
42x120 Chgo.	202.30	—.20
48x 96 Chgo.	185.00	—.05
48x120	231.20	—.05
No. 12 Wt. per Sq. Ft. 4.531		
30x 96	90.60	—.15
30x120 Chgo.	113.30	—.15
36x 96	108.80	—.15
36x120 Chgo.	135.90	—.15
42x 96 Chgo.	126.80	—.10
42x120 Chgo.	158.70	—.10
48x 96 Chgo.	145.00	+.05
48x120	181.20	+.05
No. 14 Wt. per Sq. Ft. 3.281		
30x 96	65.60	—.05
30x120 Chgo.	82.00	—.05
36x 96	78.80	—.05
36x120	98.40	—.05
42x 96 Chgo.	91.90	Base
42x120 Chgo.	114.80	Base
48x 96 Chgo.	105.00	+.15
48x120	131.20	+.15
No. 16 Wt. per Sq. Ft. 2.656		
24x 96	42.50	Base
24x120 Chgo.	53.10	Base
28x 96	49.60	Base
28x120 Chgo.	62.00	Base
30x 96	53.10	Base
30x120	66.40	Base
36x 96	63.80	Base
36x120	79.70	Base
42x 96 Chgo.	74.40	+.05
42x120 Chgo.	93.00	+.05
48x 96	85.00	+.20
48x120	106.20	+.20
No. 18 Wt. per Sq. Ft. 2.156		
24x 96	34.50	+.10
24x120 Chgo.	43.10	+.10
28x 72 Chgo.	30.20	+.10
28x 84 Chgo.	35.20	+.10
28x 96	40.20	+.10
28x108 Chgo.	45.30	+.10
28x120 Chgo.	50.30	+.10
30x 96	43.10	+.10
30x120	53.90	+.10
36x 96	51.80	+.10
36x120	64.70	+.10
42x 96 Chgo.	60.40	+.15
42x120 Chgo.	75.50	+.15
48x 96	69.00	+.35
48x120	86.20	+.35
No. 20 Wt. per Sq. Ft. 1.656		
24x 96	26.50	+.15
24x120 Chgo.	33.10	+.15
26x 96	28.70	+.15
28x 72 Chgo.	23.20	+.15
28x 84 Chgo.	27.10	+.15
28x 96	30.90	+.15
28x108 Chgo.	34.80	+.15
28x120	38.60	+.15
28x144 Chgo.	46.40	+.25
30x 96	33.10	+.15
30x120	41.40	+.15
36x 96	39.80	+.15
36x120	49.70	+.15
42x 96	46.40	+.30
42x120	58.00	+.30
48x 96	53.00	+.55
48x120	66.20	+.55
No. 22 Wt. per Sq. Ft. 1.406		
24x 96	22.50	+.20
24x120 Chgo.	28.10	+.20
28x 72 Chgo.	19.70	+.20
28x 84 Chgo.	23.00	+.20
28x 96	26.20	+.20
28x108 Chgo.	29.50	+.20
28x120	32.80	+.20
28x144 Chgo.	39.40	+.30
30x 96	28.10	+.20
30x120 Chgo.	35.20	+.20
36x 96	33.80	+.20
36x120	42.20	+.20
42x 96 Chgo.	39.40	+.55
42x120 Chgo.	49.20	+.55
48x 96	45.00	+.85
48x120	56.20	+.85
No. 24 Wt. per Sq. Ft. 1.156		
24x 96	18.50	+.25
24x120	23.10	+.25
26x 96	20.00	+.25
28x 72 Chgo.	16.20	+.25
28x 84 Chgo.	18.90	+.25
28x 96	21.60	+.25
28x108 Chgo.	24.30	+.25
28x120	27.00	+.25
28x144 Chgo.	32.40	+.35
30x 96	23.10	+.25
30x120	28.90	+.25
36x 96	27.80	+.25
36x120	34.70	+.25
No. 26 Wt. per Sq. Ft. .906		
24x 96	14.50	+.50
24x120	18.10	+.50
26x 96	15.70	+.50
28x 72 Chgo.	12.70	+.50
28x 84 Chgo.	14.80	+.50
28x 96	16.90	+.50
28x108 Chgo.	19.00	+.50
28x120	21.10	+.50
30x 96	18.10	+.50
30x120	22.70	+.50
36x 96	21.80	+.50
36x120	27.20	+.50
No. 28 Wt. per Sq. Ft. .781		
24x 96	12.50	+.75
24x120	15.60	+.75
26x 96 St.P.	13.50	+.75
26x120 St.P.	16.90	+.75
28x 96	14.60	+.75
28x120	18.20	+.75
30x 96	15.60	+.75
30x120	19.50	+.75
36x 96	18.80	+.95
36x120	23.40	+.95

For cutting extras, see page 224.

GALVANIZED SHEETS

BEST BLOOM—OPEN HEARTH

Prime Quality

Size U. S. Standard Gage and Inches	Weight Per Sheet, Pounds	Extra for Size
No. 10 Wt. per Sq. Ft. 5.781		
24x 96 St.P.	92.5	—.50
24x120 St.P.	115.6	—.50
30x 96	115.6	—.50
30x120	144.5	—.50
36x 96	138.8	—.50
36x120	173.4	—.50
42x 96	161.8	—.45
42x120	202.3	—.45
48x 96	185.0	—.30
48x120	231.2	—.30
No. 12 Wt. per Sq. Ft. 4.531		
24x 96 St.P.	72.5	—.40
24x120 St.P.	90.6	—.40
30x 96	90.6	—.40
30x120	113.3	—.40
36x 96	108.8	—.40
36x120	135.9	—.40
36x144 St.P.	163.1	—.40
42x 96	126.8	—.35
42x120	158.7	—.35
48x 96	145.0	—.20
48x108 St.P.	163.1	—.20
48x120	181.2	—.20
No. 14 Wt. per Sq. Ft. 3.281		
24x 96	52.5	—.30
24x120 St.P.	65.6	—.30
30x 96	65.6	—.30
30x120	82.0	—.30
36x 96	78.8	—.30
36x120	98.4	—.30
42x 96	91.9	—.25
42x120	114.8	—.25
48x 96	105.0	—.10
48x120	131.2	—.10
48x144 Balt.	157.5	—.10
No. 16 Wt. per Sq. Ft. 2.656		
24x 96	42.5	—.25
24x120	53.1	—.25
28x 96	49.6	—.25
28x120	62.0	—.25
30x 96	53.1	—.25
30x120	66.4	—.25
36x 96	63.8	—.25
36x120	79.7	—.25
42x 96	74.4	—.20
42x120	93.0	—.20
48x 96	85.0	—.05
48x120	106.2	—.05
No. 18 Wt. per Sq. Ft. 2.156		
24x 96	34.5	—.15
24x120	43.1	—.15
26x 96	37.4	—.15
26x120 Chgo.	46.7	—.15
28x 72	30.2	—.15
28x 84	35.2	—.15
28x 96	40.2	—.15
28x108	45.3	—.15
28x120	50.3	—.15
30x 96	43.1	—.15
30x120	53.9	—.15
No. 18 Wt. per Sq. Ft. 2.156		
36x 96	51.8	—.15
36x120	64.7	—.15
42x 96	60.4	—.10
42x120	75.5	—.10
48x 96	69.0	+.10
48x120	86.2	+.10
No. 20 Wt. per Sq. Ft. 1.656		
24x 96	26.5	—.10
24x120	33.1	—.10
26x 96	28.7	—.10
26x120	35.9	—.10
28x 72	23.2	—.10
28x 84	27.1	—.10
28x 96	30.9	—.10
28x108	34.8	—.10
28x120	38.6	—.10
28x144 Chgo.	46.4	Base
30x 72 New'k	24.8	—.10
30x 84 New'k	29.0	—.10
30x 96	33.1	—.10
30x108 New'k	37.3	—.10
30x120	41.4	—.10
36x 96	39.8	—.10
36x120	49.7	—.10
42x 96	46.4	+.05
42x120	58.0	+.05
48x 96	53.0	+.30
48x120	66.2	+.30
No. 22 Wt. per Sq. Ft. 1.406		
24x 96	22.5	—.05
24x120	28.1	—.05
26x 96	24.4	—.05
28x 72	19.7	—.05
28x 84	23.0	—.05
28x 96	26.2	—.05
28x108	29.5	—.05
28x120	32.8	—.05
28x144 Chgo.	39.4	+.05
30x 72 New'k	21.1	—.05
30x 84 New'k	24.6	—.05
30x 96	28.1	—.05
30x108 New'k	31.6	—.05
30x120	35.2	—.05
36x 72 New'k	25.3	—.05
36x 84 New'k	29.5	—.05
36x 96	33.8	—.05
36x120	42.2	—.05
42x 96	39.4	+.30
42x120	49.2	+.30
48x 96	45.0	+.60
48x120	56.2	+.60
No. 24 Wt. per Sq. Ft. 1.156		
24x 96	18.5	Base
24x120	23.1	Base
26x 96 Chgo.	20.0	Base
26x120	25.0	Base
28x 72	16.2	Base
28x 84	18.9	Base
28x 96	21.6	Base
28x108	24.3	Base
28x120	27.0	Base

(Concluded on following page)

GALVANIZED SHEETS

BEST BLOOM-OPEN HEARTH

Prime Quality

Size U. S. Standard Gage and Inches	Weight Per Sheet, Pounds	Extra for Size
No. 24 Wt. per Sq. Ft. 1.156		
28x144 Chgo.	32.4	+.10
30x 72 New'k	17.3	Base
30x 84 New'k	20.2	Base
30x 96	23.1	Base
30x108 New'k	26.0	Base
30x120	28.9	Base
36x 72 New'k	20.8	Base
36x 96	27.8	Base
36x120	34.7	Base
42x 96	32.4	+.45
42x108 St. P.	36.4	+.45
42x120	40.5	+.45
48x 96	37.0	+.75
48x120	46.2	+.75
No. 26 Wt. per Sq. Ft. .906		
24x 96	14.5	+.25
24x120	18.1	+.25
26x 96	15.7	+.25
26x120	19.6	+.25
28x 72	12.7	+.25
28x 84	14.8	+.25
28x 96	16.9	+.25
28x108	19.0	+.25
28x120	21.1	+.25
28x144 Chgo.	25.4	+.35
30x 72 New'k	13.6	+.25
30x 84 New'k	15.9	+.25
30x 96	18.1	+.25
30x108 New'k	20.4	+.25
30x120	22.7	+.25
30x144 Chgo.	27.3	+.35
32x 96 Chgo.	19.3	+.25
32x120 Chgo.	24.1	+.25
36x 72 New'k	16.3	+.25
36x 96	21.8	+.25
36x120	27.2	+.25
42x 96	25.4	+.90
42x120	31.7	+.90
48x 96 New'k	29.0	+1.25
48x120 New'k	36.2	+1.25
No. 27 Wt. per Sq. Ft. .844		
24x 96	13.5	+.35
28x 96	15.7	+.35
30x 96	16.9	+.35
30x120 St. P.	21.1	+.35
36x 96	20.3	+.40
36x120	25.3	+.40
No. 28 Wt. per Sq. Ft. .781		
24x 96	12.5	+.50
24x120	15.6	+.50
26x 96 Chgo.	13.5	+.50
26x120	16.9	+.50
28x 72	10.9	+.50
28x 84	12.8	+.50
28x 96	14.6	+.50
28x108	16.4	+.50
28x120	18.2	+.50
28x144 Chgo.	21.8	+.60
30x 96	15.6	+.50
30x108 New'k	17.6	+.50
30x120	19.5	+.50
30x144 Chgo.	23.4	+.60
32x 96	16.7	+.50
32x120 Chgo.	20.9	+.50
36x 72 New'k	14.1	+.70
36x 96	18.8	+.70
36x120	23.4	+.70
No. 30 Wt. per Sq. Ft. .656		
24x 96	10.5	+1.00
24x120 Chgo.	13.1	+1.00
26x 96 New'k	11.4	+1.00
28x 96 St. P.	12.3	+1.00
30x 72 New'k	9.8	+1.00
30x 96	13.1	+1.00
30x108 New'k	14.8	+1.00
30x120	16.4	+1.00
32x 96 Chgo.	13.9	+1.00
36x 96	15.8	+1.20
36x120	19.7	+1.20

For cutting extras, see page 224.

OPEN HEARTH LONG TERNE SHEETS

(LEAD COATED) Prime Quality

*IN OUR CHICAGO STOCK

Manufactured from steel specially selected and coated with a mixture of tin and lead.

Used for automobile radiators and spring covers, oil filters, building trim (flashing, conductor pipe and gutters), gasoline tanks and fireproof construction, such as doors, door casings, etc.

Gage and Size, Inches	Weight per Sheet, Pounds	Deduct or add to base
No. 16x30x 96*	50.37	—.25
36x120	75.55	—.25
No. 18x30x 96*	40.37	—.15
36x120	60.55	—.15
No. 20x30x 96*	30.37	—.10
36x120	45.55	—.10
No. 22x36x120	38.05	—.05
No. 24x36x120	30.55	Base
No. 26x36x120	23.05	+.25
No. 28x36x120	19.30	+.70

For cutting extras see page 224.

Crating Sheets: All grades of Cold Rolled, Vitrenamel, Galvannealed and Long Terne Stock Sizes, are crated for shipment. Skeleton Crating, unless advised to the contrary.

Skeleton Crating	**40** cents cwt.	**$2.00** minimum.
Full Crating	**95** cents cwt.	**$4.75** minimum.

GALVANNEALED SHEETS

ROLLER LEVELED and STRETCHER LEVELED

Prime Quality

A specially produced Non-Flaking Zinc Coated Sheet of Exceptional Quality. Difficult formations which cause flaking of galvanized sheets prompted the development of Galvannealed.

Can be formed with dies and in brakes, without injury to the sheet which has a uniform tightly adherent coating. Fulfills the demand for a zinc coated sheet upon which paint or lacquer will readily adhere. Can be soldered or spot welded.

Will successfully withstand higher temperatures than regular galvanized sheets without injury to the coating.

Particularly adapted for road signs, signboards, sash, mouldings, corner beads, columns, etc.

Gage and Size, Inches	Weight per Sheet, Pounds	Deduct or add to base
No. 14 Wt. per Sq. Ft. 3.281		
30x 96 Chgo.	65.6	—.30
30x120 Chgo.	82.0	—.30
36x 96 Chgo.	78.8	—.30
36x120 Chgo.	98.4	—.30
36x144 Chgo.	118.1	—.30
48x120 St.P.	131.2	—.10
No. 16 Wt. per Sq. Ft. 2.656		
24x 96 St.P.	42.5	—.25
26x 96 St.P.	46.0	—.25
30x 96	53.1	—.25
30x120 Chgo.	66.4	—.25
36x 96	63.8	—.25
36x120	79.7	—.25
36x144 Chgo.	95.6	—.25
42x120 Chgo.	93.0	—.20
42x144 Chgo.	111.5	—.20
48x 96	85.0	—.05
48x120	106.2	—.05
No. 18 Wt. per Sq. Ft. 2.156		
24x 96	34.5	—.15
24x120 New'k	43.1	—.15
30x 96	43.1	—.15
30x120 Chgo.	53.9	—.15
36x 96	51.8	—.15
36x120	64.7	—.15
42x120	75.5	—.10
42x144 Chgo.	90.6	Base
48x 96	69.0	+.10
48x120	86.2	+.10
48x144 Chgo.	103.5	+.20
No. 20 Wt. per Sq. Ft. 1.656		
24x 96	26.5	—.10
24x120 Chgo.	33.1	—.10
28x120 Chgo.	38.6	—.10
30x 96	33.1	—.10
30x120	41.4	—.10
36x 96	39.8	—.10
36x120	49.7	—.10
36x144 Chgo.	59.6	Base
42x 96	46.4	+.05
42x120 Chgo.	58.0	+.05
42x144 Chgo.	69.5	+.15
48x 96	53.0	+.30
48x120	66.2	+.30
48x144 Chgo.	79.5	+.40
No. 22 Wt. per Sq. Ft. 1.406		
24x 96	22.5	—.05
24x120 Chgo.	28.1	—.05

Gage and Size, Inches	Weight per Sheet, Pounds	Deduct or add to base
No. 22 Wt. per Sq. Ft. 1.406		
30x 96	28.1	—.05
30x120	35.2	—.05
36x 96	33.8	—.05
36x120	42.2	—.05
36x144	50.6	+.05
42x 96 Chgo.	39.4	+.30
42x120 Chgo.	49.2	+.30
42x144 Chgo.	59.0	+.40
48x 96	45.0	+.60
48x120	56.2	+.60
48x144	67.5	+.70
No. 24 Wt. per Sq. Ft. 1.156		
24x 96	18.5	Base
24x120 Chgo.	23.1	Base
26x120 Chgo.	25.0	Base
30x 96	23.1	Base
30x120 Chgo.	28.9	Base
36x 96	27.8	Base
36x120	34.7	Base
42x 96 Chgo.	32.4	+.45
42x120 Chgo.	40.5	+.45
42x144 Chgo.	48.6	+.55
48x 96	37.0	+.75
48x120	46.2	+.75
48x144	55.4	+.85
No. 26 Wt. per Sq. Ft. .906		
24x 96	14.5	+.25
24x120 St.P.	18.1	+.25
30x 96	18.1	+.25
30x120 Chgo.	22.7	+.25
30x144 Chgo.	27.3	+.35
36x 96	21.8	+.25
36x120	27.2	+.25
36x144 Chgo.	32.6	+.35
42x 96	25.4	+.90
42x120	31.7	+.90
42x144	38.0	+1.00
No. 28 Wt. per Sq. Ft. .781		
24x 96 Chgo.	12.5	+.50
30x 96	15.6	+.50
30x120 Chgo.	19.5	+.50
36x 96 Chgo.	18.8	+.70
36x120 Chgo.	23.4	+.70
No. 30 Wt. per Sq. Ft. .656		
36x 96	15.7	+1.20
36x120 Chgo.	19.7	+1.20

Sheets 42″ and wider are all Stretcher Leveled.
Extra for Stretcher leveling **40c** per 100 lbs.
If sheets resquared **12½%** extra.

CORRUGATED STEEL SHEETS

PLAIN BLACK and GALVANIZED

1¼″ or 1½″ Corrugations

IN OUR CHICAGO STOCK

Gage and size	No. of Square Feet Per Sheet	No. Sheets Per Square (100 Sq. Feet)	Estimated Weight Per Square (100 Sq. Feet) in Pounds	
			Plain Black	Galvanized
16—26 x 96	17.333	5.769	270	286
26 x 120	21.667	4.616	270	286
18—26 x 72	13.000	7.692	. . .	232
26 x 84	15.167	6.593	. . .	232
26 x 96	17.333	5.769	216	232
26 x 108	19.500	5.128	. . .	232
26 x 120	21.667	4.616	216	232
20—26 x 72	13.000	7.692	162	178
26 x 84	15.167	6.593	162	178
26 x 96	17.333	5.769	162	178
26 x 108	19.500	5.128	162	178
26 x 120	21.667	4.616	162	178
26 x 144	26.000	3.846	162	178
22—26 x 72	13.000	7.692	135	151
26 x 84	15.167	6.593	135	151
26 x 96	17.333	5.769	135	151
26 x 108	19.500	5.128	135	151
26 x 120	21.667	4.616	135	151
26 x 144	26.000	3.846	135	151
24—26 x 72	13.000	7.692	108	125
26 x 84	15.167	6.593	108	125
26 x 96	17.333	5.769	108	125
26 x 108	19.500	5.128	108	125
26 x 120	21.667	4.616	108	125
26 x 144	26.000	3.846	108	125
26—26 x 72	13.000	7.692	81	98
26 x 84	15.167	6.593	81	98
26 x 96	17.333	5.769	81	98
26 x 108	19.500	5.128	81	98
26 x 120	21.667	4.616	81	98
26 x 144	26.000	3.846	81	98
28—26 x 72	13.000	7.692	68	84
26 x 84	15.167	6.593	68	84
26 x 96	17.333	5.769	68	84
26 x 108	19.500	5.128	68	84
26 x 120	21.667	4.616	68	84
26 x 144	26.000	3.846	68	84

Also can supply from stock sheets 27½″ wide after corrugating
Also have in stock, Corrugated Galvanized Copper Steel Sheets

The widths shown are after corrugating.

The size commonly used and furnished by us, unless otherwise specified, is 26″ after corrugating, 2 ½″ corrugations—covering 24″ wide when lapped one corrugation. Sheets 27 ½″ after corrugating 2 ½″ also cover 24″ wide when lapped one and one-half corrugations. Sheets corrugated 1 ¼″ finish narrower than sheets with larger corrugations but covering width is the same. **A square is 100 sq. ft. of corrugated material laid end to end and edge to edge, no allowance for lap.**

ARCHES—2½″ Corrugation

Curved to Any Radius or Complete Circles

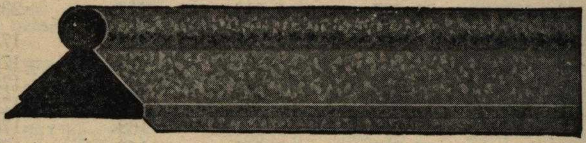
RIDGE ROLL furnished with plain or corrugated aprons
ROOFING NAILS, lead headed nails and fasteners

CORRUGATED RIDGE ROLL

Carried in 2½″ corrugation No. 20 to 28-2½″ Roll 12″-Girth 4″ Apron 10′ lengths. Can furnish 1¼″ corrugation.

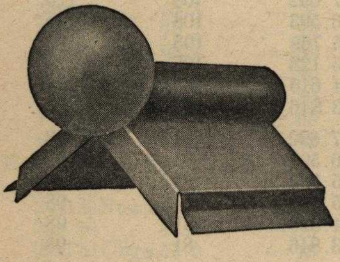
GALVANIZED RIDGE ROLL

With Nailing Flange



IN 10 FOOT LENGTHS

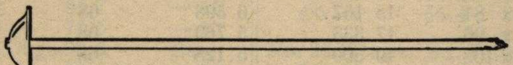
Size of Roll, Inches	1¼	1½	2	2½
No. 28 & 29 Gage Wired and Crated:				



GLOBE FINIALS

For Plain Ridge Roll

1¼ inch roll........................
1½ inch roll........................
2 inch roll........................
2½ inch roll........................

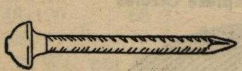


LEAD HEADED FASTENERS

For Fastening Corrugated Sheets to Structurals

Size Inches	Gage	Approx. No. to Lb.	Size Inches	Gage	Approx. No. to Lb.	Size Inches	Gage	Approx. No. to Lb.
4	No. 10	31	7	No. 10	23	10	No. 10	18
5	No. 10	28	8	No. 10	21	12	No. 10	15
6	No. 10	25	9	No. 10	20			

Can also supply flat or curved head galvanized fasteners.



LEAD HEADED NAILS GALVANIZED

Size Inches	Gage	Approx. No. to Lb	Size Inches	Gage	Approx. No. to Lb.	Size Inches	Gage	Approx. No. to Lb.
1½	No. 10	85	2	No. 10	69	3	No. 10	52
1¾	No. 10	77	2½	No. 10	60			

FLAT MILD STEEL BARS

Size, Inches	Wt. per Foot, Pounds	Extra for Size	Lengths in Stock, Feet
1-4x ⅜	.319	1.40	16
½	.425	.90	16
⅝	.531	.60	16
¾	.638	.40	16
⅞	.744	.30	16
1	.850	.15	16, 36
1⅛	.956	.15	16
1¼	1.06	.15	16, 36
1⅜	1.17	.15	16, 20
1½	1.28	.15	16, 36
1⅝	1.38	.15	Chgo.
1¾	1.49	.15	16
2	1.70	.15	16, 36
2¼	1.91	.15	16
2½	2.13	.15	16, 36
2¾	2.34	.15	16
3	2.55	.15	16, 36
3¼	2.76	.15	16
3½	2.98	.15	16, 20, 36
3¾	3.19	.15	Chgo.
4	3.40	.15	16, 36
4¼	3.61	.15	Chgo.
4½	3.83	.15	16
5	4.25	.15	16, 36
5½	4.68	.15	16
6	5.10	.15	16, 36
5-16x ½	.531	.90	16
⅝	.664	.60	16
¾	.797	.40	16
⅞	.930	.30	16
1	1.06	.15	16
1⅛	1.20	.15	16
1¼	1.33	.15	16
1⅜	1.46	.15	Chgo.
1½	1.59	.15	16, 36
1¾	1.86	.15	16
2	2.13	.15	16, 36
2¼	2.39	.15	16, 36
2½	2.66	.15	16
2¾	2.92	.15	16
3	3.19	.15	16
3¼	3.45	.15	16
3½	3.72	.15	16
4	4.25	.15	16
4½	4.78	.15	16
5	5.31	.15	16
5½	5.84	.15	16
6	6.38	.15	16
3-8x ½	.638	.70	16
⅝	.797	.40	16
¾	.956	.30	16
3-8x ⅞	1.12	.20	16
1	1.28	Base	16
1⅛	1.43	Base	16
1¼	1.59	Base	16
1⅜	1.75	Base	16
1½	1.91	Base	16, 36
1⅝	2.07	Base	16
1¾	2.23	Base	16
2	2.55	Base	16, 36
2¼	2.87	Base	16
2½	3.19	Base	16, 36
2¾	3.51	Base	16
3	3.83	Base	16, 36
3¼	4.14	Base	16, 36
3½	4.46	Base	16
3¾	4.78	Base	New'k.
4	5.10	Base	16, 20, 36
4½	5.74	Base	16
5	6.38	Base	16, 36
5½	7.01	Base	16, 36
6	7.65	Base	16, 36
7-16x ⅝	0.93	.40	New'k.
¾	1.12	.30	Chgo.
⅞	1.30	.20	Chgo.
1	1.49	Base	16
1⅛	1.67	Base	New'k.
1¼	1.86	Base	16
1⅜	2.05	Base	Chgo.
1½	2.23	Base	16
1¾	2.60	Base	16
2	2.98	Base	16
2¼	3.35	Base	Chgo.
2½	3.72	Base	16
2¾	4.09	Base	Chgo.
3	4.46	Base	16
3¼	4.83	Base	Chgo.
3½	5.21	Base	16
4	5.95	Base	16
4½	6.69	Base	Chgo.
5	7.44	Base	16
5½	8.18	Base	Chgo.
6	8.93	Base	16
1-2x ⅝	1.06	.40	16
¾	1.28	.30	16
⅞	1.49	.20	16
1	1.70	Base	16
1⅛	1.91	Base	16
1¼	2.13	Base	16
1⅜	2.34	Base	16
1½	2.55	Base	16, 36
1⅝	2.76	Base	16
1¾	2.98	Base	16

(Continued on following page)

FLAT MILD STEEL BARS

Size, Inches	Wt. per Foot, Pounds	Extra for Size	Lengths in Stock, Feet
1-2x 2	3.40	Base	16, 36
2¼	3.83	Base	16, 20
2½	4.25	Base	16, 36
2¾	4.68	Base	16
3	5.10	Base	16, 36
3¼	5.53	Base	16
3½	5.95	Base	16, 36
3¾	6.38	Base	Chgo.
4	6.80	Base	16, 36
4½	7.65	Base	16
5	8.50	Base	16, 36
5½	9.35	Base	16
6	10.20	Base	16, 36
5-8x ¾	1.59	.30	16
⅞	1.86	.20	16
1	2.13	Base	16
1⅛	2.39	Base	16
1¼	2.66	Base	16
1⅜	2.92	Base	Chgo.
1½	3.19	Base	16
1⅝	3.45	Base	16
1¾	3.72	Base	16
2	4.25	Base	16, 36
2¼	4.78	Base	16
2½	5.31	Base	16, 36
2¾	5.84	Base	16
3	6.38	Base	16, 36
3¼	6.91	Base	16
3½	7.44	Base	16, 36
4	8.50	Base	16, 36
4½	9.56	Base	16
5	10.63	Base	16, 36
5½	11.69	Base	16
6	12.75	Base	16, 36
3-4x ⅞	2.23	.20	16
1	2.55	Base	16
1⅛	2.87	Base	16
1¼	3.19	Base	16
1⅜	3.51	Base	New'k.
1½	3.83	Base	16
1¾	4.46	Base	16
2	5.10	Base	16, 36
2¼	5.74	Base	16
2½	6.38	Base	16, 36
2¾	7.01	Base	16
3	7.65	Base	16, 36
3¼	8.29	Base	Chgo.
3½	8.93	Base	16
4	10.20	Base	16, 36
4½	11.48	Base	16
5	12.75	Base	16, 36
5½	14.03	Base	16
6	15.30	Base	16, 36
7-8x 1	2.98	Base	16
1⅛	3.35	Base	New'k.
1¼	3.72	Base	16
1⅜	4.09	Base	Chgo.
1½	4.46	Base	16
1¾	5.20	Base	16
2	5.95	Base	16
2¼	6.69	Base	16
2½	7.44	Base	16
2¾	8.18	Base	16
3	8.93	Base	16
3½	10.41	Base	16
4	11.90	Base	16
4½	13.39	Base	16
5	14.88	Base	16
5½	16.36	Base	16
6	17.85	Base	16
1 x 1¼	4.25	Base	16
1½	5.10	Base	16
1¾	5.95	Base	16
2	6.80	Base	16, 36
2¼	7.65	Base	16
2½	8.50	Base	16, 36
2¾	9.35	Base	16
3	10.20	Base	16, 36
3¼	11.05	Base	Chgo.
3½	11.90	Base	16
3¾	12.75	Base	New'k.
4	13.60	Base	16, 36
4½	15.30	Base	16
5	17.00	Base	16, 36
5½	18.70	Base	16
6	20.40	Base	16, 20, 36
1 1-8x2	7.65	.10	16
2½	9.56	.10	New'k.
3	11.48	.10	16
4	15.30	.20	16
5	19.13	.20	16
*6	22.95	.20	16
1 1-4x1½	6.38	.10	16
1¾	7.44	.10	16
2	8.50	.10	16
2¼	9.56	.10	16
2½	10.63	.10	16, 36
2¾	11.69	.10	16
3	12.75	.10	16, 36
3¼	13.81	.15	Chgo.
3½	14.88	.15	16
4	17.00	.20	16
4½	19.13	.20	16
5	21.25	.20	16, 36
5½	23.38	.20	16
6	25.50	.20	16

(Concluded on following page)

FLAT MILD STEEL BARS

Size, Inches	Wt. per Foot, Pounds	Extra for Size	Lengths in Stock, Feet
1 1-2x1¾	8.93	.10	New'k
2	10.20	.10	16
2¼	11.48	.10	16
2½	12.75	.10	16
2¾	14.03	.10	New'k
3	15.30	.10	16
3½	17.85	.15	16
4	20.40	.20	16
4½	22.95	.20	16
5	25.50	.20	16, 36
5½	28.05	.20	16
6	30.60	.20	16
1 3-4x2	11.90	.10	16
2½	14.88	.10	Chgo.
3	17.85	.10	16
3½	20.83	.15	Chgo.
4	23.80	.20	16
4½	26.78	.20	16, 36
5	29.75	.20	16, 36
5½	32.73	.20	Chgo.
6	35.70	.20	16

Size, Inches	Wt. per Foot, Pounds	Extra for Size	Lengths n Stock, Feet
2 x 2¼	15.30	.10	New'k
2½	17.00	.10	16
3	20.40	.10	16
3½	23.80	.15	16
4	27.20	.20	16
4½	30.60	.20	16
5	34.00	.20	16
6	40.80	.20	16
2 1-4x3	22.95	.25	New'k.
4	30.60	.25	New'k.
2 1-2x3	25.50	.25	16
3½	29.75	.25	16
4	34.00	.25	16
4½	38.26	.25	16
5	42.50	.25	16
5½	46.75	.30	New'k
6	51.00	.30	16
3 x 4	40.80	.25	16
4½	45.90	.25	Chgo.
5	51.00	.25	16
6	61.20	.30	16

*Also in our St. Paul Stock in Dead Soft Quality, not over .09 Carbon—16′ long.

For wider than 6″, see PLATES. For cutting extras, see pages 219 and 220.

For

STAINLESS STEELS

See pages 110 to 123

For Type Numbers and Analyses see page 109

FLATS
HOT ROLLED FORGING STEEL
AISI C1045 SAE 1045
.43 to .50 Carbon

Size, Inches	Wt. per Foot, Pounds	Extra for Size	Lengths in Stock, Feet
1-4 x1	0.85	.15	16
1¼	1.06	.15	16
1½	1.28	.15	16
2	1.70	.15	16
2¼	1.91	.15	Chgo.
2½	2.13	.15	16
2¾	2.34	.15	16
3	2.55	.15	16
3½	2.98	.15	Chgo.
4	3.40	.15	16
5	4.25	.15	16
6	5.10	.15	16
5-16x1½	1.59	.15	Chgo.
2	2.13	.15	Chgo.
3-8 x ⅝	0.80	.40	Chgo.
1	1.28	Base	16
1¼	1.59	Base	16
1½	1.91	Base	16
1¾	2.23	Base	Chgo.
2	2.55	Base	16
2¼	2.87	Base	16
2½	3.19	Base	16
3	3.83	Base	16
3½	4.46	Base	16
4	5.10	Base	16
5	6.38	Base	16
6	7.65	Base	16
1-2 x1	1.70	Base	16
1¼	2.13	Base	16
1½	2.55	Base	16
2	3.40	Base	16
2½	4.25	Base	16
3	5.10	Base	16
4	6.80	Base	16
5	8.50	Base	16
6	10.20	Base	16
5-8 x1½	3.19	Base	16
2	4.25	Base	16
2½	5.31	Base	16
5-8 x3	6.38	Base	16
4	8.50	Base	16
5	10.63	Base	Chgo.
6	12.75	Base	Chgo.
3-4 x1½	3.83	Base	16
2	5.10	Base	16
2½	6.38	Base	16
3	7.65	Base	16
4	10.20	Base	16
5	12.75	Base	Chgo.
6	15.30	Base	Chgo.
7-8x 2	5.95	Base	Chgo.
2½	7.44	Base	Chgo.
3	8.93	Base	Chgo.
4	11.90	Base	Chgo.
6	17.85	Base	Chgo.
1 x2	6.80	Base	16
2½	8.50	Base	16
3	10.20	Base	16
4	13.60	Base	16
5	17.00	Base	Chgo.
6	20.40	Base	16
1 1-4x2	8.50	.10	Chgo.
2½	10.63	.10	Chgo.
3	12.75	.10	Chgo.
4	17.00	.20	Chgo.
5	21.25	.20	Chgo.
6	25.50	.20	Chgo.
1 1-2x2	10.20	.10	Chgo.
2½	12.75	.10	Chgo.
3	15.30	.10	Chgo.
4	20.40	.20	Chgo.
5	25.50	.20	Chgo.
6	30.60	.20	Chgo.
2 x2½	17.00	.10	Chgo.
3	20.40	.10	Chgo.
4	27.20	.20	Chgo.
5	34.00	.20	Chgo.
6	40.80	.20	Chgo.

For wider than 6″ see PLATES. For cutting extras, see pages 219 and 220.

PLOW POINT STEEL
Recommended Treatment:
Heat to Cherry Red and Quench.
IN OUR TWIN CITY (ST. PAUL) STOCK

Size, Inches	Wt. per Foot, Pounds	Extra for Size	Lengths in Stock, Feet
5⁄16x2	2.13	.15	16
⅜x1½	1.91	Base	16
1¾	2.23	Base	16
⅜x2	2.55	Base	16
½x2	3.40	Base	16
2½	4.25	Base	16

HOT ROLLED FLATS (GALVANIZED)

Size B. W. Gage and Inches	Approx. Wt. Per Foot, Pounds	Lengths in Stock, Feet
1-4x ¾	.67	16
1	.89	16
1¼	1.11	16
1½	1.34	16
1¾	1.56	Chgo.
2	1.79	16
1-4 x3	2.68	Chgo.
5-16x2	2.24	Chgo.
3-8 x1	1.34	Chgo.
1¼	1.67	Chgo.
1½	2.01	16
2	2.68	16

Other sizes galvanized when required. Prices quoted on request.

IN OUR TWIN CITY (ST. PAUL) STOCK

ROAD GRADER AND SCRAPER BLADES

Bevel Edge Flat, Section S-20

.80 - .95 Carbon

Size, Inches	Weight per Ft., Pounds	Ext. for Size	Lengths in Stocd, Feet	Size, Inches	Weight per Ft., Pounds	Ext. for Size	Lengths in Stock, Feet
5/16x6	5.60	.15	30-40	½x6	8.80	Base	30-40
⅜x6	6.70	Base	30-40	⅝x6	11.40	Base	30-40

Blanks cut to length for standard machines without cutting charge.

CURVED, BEVELED EDGE GRADER BLADES

Sections S-266 and S-291

.85 - 1.00 Carbon

In stock cut, punched and countersunk in 5′, 6′, 7′ and 8′ lengths as per Minnesota State Highway Department Standard Specifications:

Size, Inches	Weight per Ft., Pounds	Ext. for Size	Lengths, in Stock, Feet	Size, Inches	Weight Per Ft., Pounds	Ext. for Size	Lengths in Stock, Feet
½x6	9.11	Base	30-40	½x8	12.51	Base	30-40

SNOW PLOW BLANKS

.50 - .60 Carbon **Square Edge**

Rolled in accordance with Minnesota State Highway Department Standard Specifications:

Size, Inches	Weight per Ft., Pounds	Ext. for Size	Lengths in Stock, Feet	Size, Inches	Weight per Ft., Pounds	Ext. for Size	Lengths n Stock, Feet
½x 6	10.20	Base	5-36	¾x 6	15.30	Base	5-36
½x12	20.40	Base	5-36	¾x 8	20.40	Base	5-36
⅝x10	21.25	Base	5-36	¾x10	25.50	Base	5-36
⅝x12	25.50	Base	5-36	¾x12	30.60	Base	5-36

.80 - .95 Carbon **Universal Mill Edge**

Size, Inches	Weight per Ft., Pounds	Ext. for Size	Lengths in Stock, Feet	Size, Inches	Weight per Ft., Pounds	Ext. for Size	Lengths in Stock, Feet
⅜x8	10.20	Base	5-36	⅝x8	17.00	Base	5-36
½x8	13.60	Base	5-36				

SCARIFIER BARS

.80 - .95 Carbon **Square Edge**

Will withstand extreme wear and overheating and they are highly resistant to shock. Material can be used as is, without heat treatment.

Size, Inches	Weight per Ft., Pounds	Ext. for Size	Lengths in Stock, Feet	Size, Inches	Weight per Ft., Pounds	Ext. for Size	Lengths in Stock, Feet
¾x2½	6.38	Base	16	1 x4	13.60	Base	16
¾x3	7.65	Base	16	1¼x2½	10.63	Base	16
⅞x2½	7.44	Base	16	1¼x3	12.75	Base	16
1 x2½	8.50	Base	16	1¼x3½	14.88	Base	16
1 x3	10.20	Base	16	1½x3	15.30	Base	16
1 x3½	11.90	Base	16				

H.R. ROUNDS
MISC. H.R. BARS
SPRING STEEL — DRILL ROD
OLD INISHED ARS
ALLOY BARS
HIGH STRENGTH STEEL
RAILS — BOILER TUB
TAINLESS TEEL HEETS
PLATES — ANGLES — ROUNDS
SQUARES — HEXAGONS
FLATS — STRIP
TUBING — PIPE — ELECTRODES
TOOLS SUPPLIES & MACHINERY — DATA

BEVEL EDGE MILD STEEL

IN OUR CHICAGO STOCK

Size, Inches	Weight per Foot, Pounds	Extra for Size	Lenghts in Stock, Feet
No. 14x ¾	.177	1.00	16
No. 12x ¾	.220	.85	16
⅞	.255	.75	16
3-16x ¾	.398	.70	16
⅞	.49	.60	16
1-4x ¾	.51	.50	16
⅞	.58	.40	16
1	.69	.25	16
1¼	.88	.25	16
5-16x1¼	1.10	.25	16
1½	1.42	.25	16
3-8x1¼	1.31	.10	16
1½	1.59	.10	16

BEVELED WASHER SECTION

ROLLED STEEL

IN OUR CHICAGO STOCK

Size, Inches	Length in Stock, Feet	Wt. per Ft. Pounds	
5/32x7/16x1¾	15 to 20	1.77	Price on application

ROUND EDGE FLATS

(Overall Measurements)

IN OUR CHICAGO STOCK

PACKING HOUSE BEEF RAIL

Size, Inches	Weight per Foot, Pounds	Extra for Size	Lengths in Stock, Feet
½x2½	4.122	Base	16
3	5.00	Base	16
SYMINGTON SPECIFICATIONS			
1⅛x5	18.20	.20	16
1½x6	29.00	.20	16

FOR

DARDELET

RIVET BOLTS

See pages 150 and 151

HOT ROLLED SOFT STEEL STRIP

Size B. W. Gage and Inches	Wt. per Foot, Pounds	Extra for Size	Lengths in Stock, Feet
No. 22x ½	.0476	3.25	Coils
⅝	.0595	2.35	Coils
¾	.0714	1.85	Coils
⅞	.0833	1.55	Coils
1	.0952	1.45	Coils
1⅛	.1071	1.45	Coils
1¼	.1190	1.45	Coils
1½	.1428	1.35	Coils
No. 20x ½	.0595	2.35	Coils
⅝	.0744	1.65	Coils
¾	.0893	1.35	Coils
⅞	.1041	1.05	Coils
1	.1190	.95	Coils
1⅛	.1339	.95	Coils
1¼	.1488	.95	Coils
1½	.1785	.90	Coils
1¾	.2083	.90	Coils
2	.2380	.90	Coils
No. 19x ⅞	.1250	.95	Chgo.
1	.1428	.85	Chgo.
1⅛	.1607	.85	Chgo.
1¼	.1785	.85	Chgo.
1½	.2142	.70	Chgo.
1¾	.2499	.70	Chgo.
No. 18x ½	.0833	1.95	Coils
⅝	.1041	1.25	Coils
¾	.1250	1.05	Coils
⅞	.1458	.90	Coils
1	.1666	.75	Coils
1⅛	.1874	.75	Coils
1¼	.2083	.75	Coils
1½	.2499	.60	Coils
1¾	.2916	.60	Coils
2	.3332	.60	Coils
2½	.4165	.70	Coils
2¾	.4582	.70	Chgo.
3	.4998	.70	Chgo.
No. 16x ⅜	.0829	2.40	16
½	.1105	1.55	16
⅝	.1381	1.05	16
¾	.1658	.90	16
⅞	.1934	.80	16
1	.2210	.65	16
1⅛	.2486	.65	Chgo.
1¼	.2763	.65	16
1½	.3315	.50	16
1¾	.3868	.50	16
2	.4420	.50	16
2¼	.4973	.45	Chgo.
No. 16x2½	.5525	.45	16
2¾	.6078	.45	Chgo.
3	.6630	.45	16
4	.8840	.50	16
No. 14x ⅜	.1058	2.00	New'k.
½	.1411	1.35	16
⅝	.1764	.95	16
¾	.2117	.85	16
⅞	.2469	.70	16
1	.2822	.60	16
1⅛	.3175	.60	Chgo.
1¼	.3528	.60	16
1½	.4233	.45	16
1¾	.4939	.45	16
2	.5644	.45	16
2¼	.6350	.40	Chgo.
2½	.7055	.40	16
2¾	.7761	.35	Chgo.
3	.8466	.35	16
3½	.9870	.35	Chgo.
4	1.129	.35	Chgo.
No. 12x ⅜	0.139	1.70	Chgo.
½	0.185	1.20	16
⅝	0.232	.85	16
¾	0.278	.70	16
⅞	0.324	.60	16
1	0.371	.50	16
1⅛	0.417	.50	16
1¼	0.463	.50	16
1⅜	0.510	.50	Chgo.
1½	0.556	.40	16
1¾	0.649	.40	16
2	0.741	.40	16
2¼	0.834	.35	16
2½	0.927	.35	16
2¾	1.019	.30	Chgo.
3	1.112	.30	16
3½	1.297	.25	16
4	1.482	.25	16
1-8x ⅜	0.1594	1.60	16
½	0.2125	1.10	16
⅝	0.2656	.75	16
¾	0.3188	.60	16
⅞	0.3719	.50	16
1	0.4250	.40	16
1⅛	0.4781	.40	16
1¼	0.5313	.40	16
1⅜	0.580	.40	Chgo.
1½	0.6375	.35	16
1¾	0.7438	.35	16

(Concluded on following page)

HOT ROLLED SOFT STEEL STRIP

(Concluded)

Size B. W. Gage and Inches	Wt. per Foot, Pounds	Extra for Size	Lengths in Stock, Feet
1-8x 2	0.8500	.35	16
2¼	0.9563	.30	16
2½	1.0625	.30	16
2¾	1.169	.25	16
3	1.275	.25	16
3¼	1.381	.20	Chgo.
3½	1.488	.20	16
3¾	1.590	.20	Newark
4	1.700	.20	16
4½	1.910	.15	16
5	2.125	.15	16
5½	2.338	.15	16
6	2.55	.15	16
7	2.975	.10	16
8	3.40	.10	16
9	3.825	.10	16
10	4.250	.10	16
12	5.100	.10	16
No. 10x ⅜	0.171	1.60	16
½	0.228	1.10	16
⅝	0.285	.75	16
¾	0.342	.60	16
⅞	0.399	.50	16
1	0.456	.40	16
1⅛	0.513	.40	16
1¼	0.570	.40	16
1⅜	0.627	.40	Chgo.
1½	0.683	.35	16
1¾	0.797	.35	16
2	0.911	.35	16
2¼	1.025	.30	16
2½	1.139	.30	16
2¾	1.253	.25	16
3	1.367	.25	16
3¼	1.481	.20	16
3½	1.595	.20	16
4	1.822	.20	16
No. 10x 4½	2.050	.15	16
5	2.278	.15	16
5½	2.506	.15	16
6	2.734	.15	16
7	3.189	.10	16, 36
8	3.645	.10	16, 30
9	4.100	.10	16, 30
3-16x ⅜	0.239	1.45	16
½	0.319	1.05	16
⅝	0.398	.70	16
¾	0.478	.55	16
⅞	0.558	.45	16
1	0.638	.35	16
1⅛	0.717	.35	16
1¼	0.797	.35	16
1⅜	0.877	.35	16
1½	0.956	.30	16
1¾	1.12	.30	16
2	1.28	.30	16
2¼	1.43	.25	16
2½	1.59	.25	16
2¾	1.75	.20	16
3	1.91	.20	16
3¼	2.07	.15	Chgo.
3½	2.23	.15	16
4	2.55	.15	16
4½	2.87	.10	16
5	3.19	.10	16
5½	3.51	.10	16
6	3.83	.10	16,20
7	4.46	.05	5-40
8	5.10	.05	5-40
9	5.74	.05	5-40
10	6.38	.05	5-40
12	7.65	.05	5-40

14 and wider, see H. R. SHEET, page 26.

For cutting 3/16 wider than 6″ see plate cutting extras, page 222.
For cutting 3/16-6″ and less see bar cutting extras, page 219.

STONE SAW BLADES

LOW CARBON
IN OUR CHICAGO STOCK

Size, Inches	Weight per Foot, Pounds	Extra for Size	Lengths in Stock, Feet
No. 10 x 4	1.822	.20	16
3/16x 4	2.550	.15	16, 16′10″, 36

.35-.45 CARBON
IN OUR TWIN CITY (ST. PAUL) STOCK

Size, Inches	Weight per Foot, Pounds	Extra for Size	Lengths in Stock, Feet
½x14	23.80	Base	5-34
½x16	27.20	Base	5-18

HOT ROLLED STRIP
(GALVANIZED)

Size B. W. Gage and Inches	Approx. Wt. Per Foot, Pounds	Lengths in Stock, Feet
No. 16x ½	0.116	Chgo.
¾	0.174	Chgo.
1	0.232	Chgo.
1½	0.348	Chgo.
1¾	0.406	Chgo.
No. 14x ⅝	0.179	Chgo.
¾	0.222	Chgo.
1	0.296	Chgo.
1½	0.444	Chgo.
2	0.593	Chgo.
No. 12x ½	0.195	Chgo.
¾	0.292	Chgo.
⅞	0.340	Chgo.
1	0.390	Chgo.
1¼	0.486	Chgo.
1½	0.585	16
1¾	0.681	Chgo.
2	0.778	Chgo.
1-8x ⅜	0.167	Chgo.
½	0.223	16
⅝	0.279	16
¾	0.335	16
⅞	0.390	16
1	0.446	16
1¼	0.558	16
1½	0.669	16
1-8x 1¾	0.781	16
2	0.890	16
2½	1.116	Chgo.
3	1.339	16
3½	1.565	Chgo.
4	1.785	Chgo.
No. 10x ½	0.239	Chgo.
⅝	0.299	16
¾	0.359	Chgo.
⅞	0.419	Chgo.
1	0.479	Chgo.
1¼	0.599	Chgo.
1½	0.717	16
1¾	0.837	16
2	0.957	Chgo.
2½	1.196	Chgo.
3	1.435	Chgo.
3-16x ½	0.335	Chgo.
⅝	0.418	Chgo.
¾	0.502	16
⅞	0.586	Chgo.
1	0.670	16
1¼	0.837	16
1½	1.004	16
1¾	1.176	Chgo.
2	1.344	16

Prices subject to quotation. Other sizes galvanized when required.

FOR

OTHER GALVANIZED BARS

See Pages 12, 17, 46, 53 and 58.

OTHER MATERIAL

GALVANIZED

AS REQUIRED

ROUND MILD STEEL BARS

OPEN HEARTH

Size Ins.	Weight per Foot, Pounds	Extra for Size	Lengths in Stock, Feet	Size Ins.	Weight per Foot, Pounds	Extra for Size	Lengths in Stock, Feet
3/16	0.094	2.00	12, 16	3	24.03	.20	16, 20, 36
¼	0.167	1.00	16, 20	3⅛	26.08	.25	20
5/16	0.261	.70	16, 20	3¼	28.21	.25	20
⅜	0.376	.40	16, 20, 36	3⅜	30.42	.25	Chgo.
7/16	0.511	.30	16, 20, 36	3½	32.71	.25	10, 20
½	0.668	.20	16, 20, 36	3⅝	35.09	.25	20
9/16	0.845	.15	16	3¾	37.55	.25	10, 20
⅝	1.04	.10	16, 20, 36	3⅞	40.10	.25	Pgh.
11/16	1.26	.10	16	4	42.73	.25	16, 18, 20, 36
¾	1.50	Base	16, 20, 36	4⅛	45.44	.25	20
13/16	1.76	Base	16	4¼	48.23	.25	18, 20, 36
⅞	2.04	Base	16, 20, 36	4⅜	51.11	.25	20
15/16	2.35	Base	16	4½	54.08	.25	18, 20, 36
1	2.67	Base	16, 20, 36	4⅝	57.12	.35	20
1 1/16	3.01	Base	16	4¾	60.25	.35	16, 18, 20, 36
1⅛	3.38	Base	16, 20, 36	4⅞	63.46	.35	New'k
1 3/16	3.77	Base	New'k	5	66.76	.35	16, 20, 36
1¼	4.17	Base	16, 20, 36	5¼	73.60	.45	20
1 5/16	4.60	Base	16	5⅜	77.15	.45	New'k.
1⅜	5.05	Base	16, 20, 36	5½	80.78	.45	20
1 7/16	5.52	Base	New'k	5¾	88.29	.55	20
1½	6.01	Base	16, 20, 36	6	96.13	.55	20
1⅝	7.05	.10	16, 36	6⅛	100.18	.65	20
1¾	8.18	.10	16, 20, 36	6¼	104.31	.65	20
1⅞	9.39	.10	16, 36	6½	112.82	.65	20
2	10.68	.10	16, 20, 36	6⅝	117.20	.75	20
2⅛	12.06	.15	16	6¾	121.67	.75	20
2¼	13.52	.15	16, 20, 36	7	130.85	.75	20
2⅜	15.06	.15	16, 20	7⅛	135.56	.75	Chgo.
2½	16.69	.15	16, 20, 36	7¼	140.36	.75	20
2⅝	18.40	.20	16	7½	150.21	.75	20
2¾	20.19	.20	16, 20	7¾	160.39	.85	New'k
2⅞	22.07	.20	16, 20	8	170.90	1.10	20

For larger sizes, see page 53. For cutting extras, see pages 219 and 220.

For

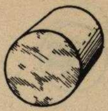
STAINLESS STEEL BARS

See pages 113 to 118

For Type Numbers and Analyses see page 109

LARGE ROUNDS FORGED

IN OUR CHICAGO STOCK



Size, Inches	Weight per Foot, Pounds	Extra for Size	Lengths in Stock, Feet			
			AISI C1020 SAE 1020	AISI C1035 SAE 1035	AISI C1045 SAE 1045	AISI C1117 SAE X1314
7¾	160.4	1.25	20	....	....	20
8	170.9	1.25	20	20	20	20
8¼	181.7	1.25	20	....	16	20
8½	192.9	1.25	20	20	16, 20	20
8¾	204.4	1.25	20	20	16, 20	20
9	216.3	1.25	20	20	16, 20	20
9¼	228.5	1.25	20	....	....	20
9½	241.0	1.25	20	20	16	20
9¾	253.9	1.25	20	20	16	20
10	267.0	1.25	20	20	16, 20	20
10¼	280.6	1.25	20	....	....	20
10½	294.4	1.25	New'k.	....	16	20
10¾	308.6	1.25	20	20	....	20
11	323.1	1.25	20	....	16	20
11½	353.1	1.25	....	....	16	....
12	384.5	1.25	20	....	16	....

Quality Extras 1035, 1045 **.05**c per 100 lbs. C 1117 **.35**c per 100 lbs.

These large rounds are forged to ½″ to ¾″ oversize to allow for finishing to diameters specified above. Weights shown are theoretical weights per foot of finished sizes.

GALVANIZED ROUNDS

Size, Inches	Approx. Weight per Foot, Pounds	Lengths in Stock, Feet	Size, Inches	Approx. Weight per Foot, Pounds	Lengths in Stock, Feet
3⁄16	.100	Chgo.	½	.701	16
¼	.175	16	⅝	1.09	16
5⁄16	.274	Chgo.	¾	1.58	16
⅜	.394	16	⅞	2.14	16
7⁄16	.537	Chgo.	1	2.80	16

DRIFT PIN STEEL—ROUNDS

Open Hearth Forging Quality

.80 to .95 Carbon
10 Foot Lengths

IN OUR CHICAGO STOCK

Size, Inches	Weight per Foot, Pounds	Extra for Size	Size, Inches	Weight per Foot, Pounds	Extra for Size
9⁄16	0.845	.15	15⁄16	2.35	Base
11⁄16	1 26	.10	11⁄16	3.01	Base
13⁄16	1.76	Base			

Quality extras of **.15**c per 100 lbs. applies.

ROUNDS

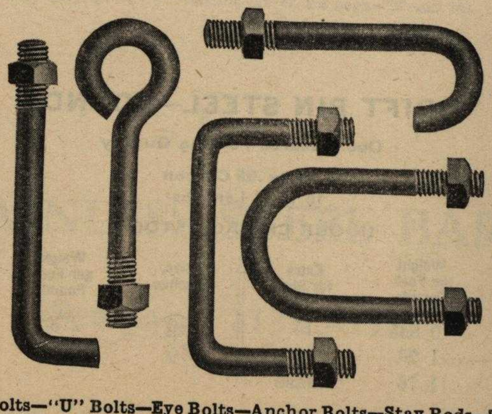
HOT ROLLED FORGING STEEL

AISI C1020 .18 to .23 Carbon SAE 1020

Size, Inches	Weight, per Foot, Pounds	Extra for Size	Lengths in Stock, Feet	Size, Inches	Weight, per Foot, Pounds	Extra for Size	Lengths in Stock, Feet
5/16	0.261	.70	Chgo.	3	24.03	.20	20
3/8	0.376	.40	Chgo.	3 1/8	26.08	.25	20
7/16	0.511	.30	Chgo.	3 1/4	28.21	.25	20
1/2	0.668	.20	18	3 3/8	30.42	.25	Chgo.
9/16	0.845	.15	18	3 1/2	32.71	.25	20
5/8	1.04	.10	18	3 5/8	35.09	.25	20
11/16	1.26	.10	Chgo.	3 3/4	37.55	.25	20
3/4	1.50	Base	18	4	42.73	.25	20
13/16	1.76	Base	Chgo.	4 1/8	45.44	.25	Chgo.
7/8	2.04	Base	18	4 1/4	48.23	.25	20
15/16	2.35	Base	Chgo.	4 3/8	51.11	.25	Chgo.
1	2.67	Base	18	4 1/2	54.08	.25	20
1 1/16	3.01	Base	Chgo.	4 5/8	57.12	.35	Chgo.
1 1/8	3.38	Base	18	4 3/4	60.25	.35	Chgo.
1 1/4	4.17	Base	18	5	66.76	.35	20
1 5/16	4.60	Base	Chgo.	5 1/4	73.60	.45	20
1 3/8	5.05	Base	18	5 1/2	80.78	.45	20
1 1/2	6.01	Base	18	5 3/4	88.29	.55	20
1 5/8	7.05	.10	18	6	96.13	.55	20
1 3/4	8.18	.10	18	6 1/8	100.18	.65	20
1 7/8	9.39	.10	18	6 1/4	104.31	.65	20
2	10.68	.10	18	6 1/2	112.82	.65	20
2 1/8	12.06	.15	18	6 5/8	117.20	.75	Chgo.
2 1/4	13.52	.15	18	6 3/4	121.67	.75	20
2 3/8	15.06	.15	18	7	130.85	.75	20
2 1/2	16.69	.15	18	7 1/8	135.56	.75	Chgo.
2 5/8	18.40	.20	18	7 1/2	150.21	.75	20
2 3/4	20.19	.20	18	8	170.90	1.10	20
2 7/8	22.07	.20	18				

For cutting extras see pages 219 and 220.

SPECIAL BOLTS



Hook Bolts—"U" Bolts—Eye Bolts—Anchor Bolts—Stay Rods—Truss Rods—Silo Rods, etc., made to order.

ROUNDS

HOT ROLLED FORGING STEEL

AISI C1035-1045 SAE 1035-1045

Size, Inches	Wt. per Foot, Pounds	Extra for Size	.32 to .38 Carbon	.43 to .50 Carbon
			Lengths in Stock, Ft.	
⅜	0.376	.40	Chgo.	Chgo.
7/16	0.511	.30	Chgo.	..
½	0.668	.20	Chgo.	18
9/16	0.845	.15	Chgo.	..
⅝	1.04	.10	Chgo.	18
¾	1.50	Base	18	18
⅞	2.04	Base	18	18
1	2.67	Base	18	18
1 1/16	3.01	Base	18	New'k
1⅛	3.38	Base	18	18
1¼	4.17	Base	18	18
1⅜	5.05	Base	18	18
1½	6.01	Base	18	18
1⅝	7.05	.10	18	18
1¾	8.18	.10	18	18
1⅞	9.39	.10	18	18
2	10.68	.10	20	20
2⅛	12.06	.15	20	20
2¼	13.52	.15	20	20
2⅜	15.06	.15	20	20
2½	16.69	.15	20	20
2⅝	18.40	.20	20	20
2¾	20.19	.20	20	20
2⅞	22.07	.20	Chgo.	Chgo.
3	24.03	.20	20	20
3⅛	26.08	.25	Chgo.	Chgo.
3¼	28.21	.25	20	20
3⅜	30.42	.25	Chgo.	Chgo.
3½	32.71	.25	20	20
3⅝	35.10	.25	Chgo.	Chgo.
3¾	37.55	.25	20	20
3⅞	40.10	.25	Chgo.	Chgo.
4	42.73	.25	20	20
4⅛	45.44	.25	St. Paul	Chgo.
4¼	48.23	.25	20	20
4⅜	51.11	.25	New'k	Chgo.
4½	54.08	.25	20	20
4⅝	57.12	.35	Pgh.	Chgo.
4¾	60.25	.35	20	20
4⅞	63.46	.35	New'k	Chgo.
5	66.76	.35	20	20
5⅛	70.14	.45	......	New'k
5¼	73.60	.45	Chgo.	20
5⅜	77.15	.45	......	New'k
5½	80.78	.45	Chgo.	20
5¾	88.29	.55	Chgo.	20
6	96.13	.55	Chgo.	20
6⅛	100.18	.65	Chgo.	Chgo
6¼	104.31	.65	Chgo.	20
6½	112.82	.65	Chgo.	20
6¾	121.67	.75	Chgo.	20
7	130.85	.75	Chgo.	20
7¼	140.36	.75	Chgo.	20
7½	150.21	.75	Chgo.	20
7¾	160.39	.85	......	New'k
8	170.90	1.10	Chgo.	20

A quality extra of **5c** cwt. applies.

For AISI and SAE SPECIFICATIONS, **see pages 194 to 205.**

For AVERAGE PHYSICAL PROPERTIES, **see pages 206 to 215.**

ROUNDS—HOT ROLLED

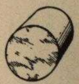
BESSEMER FREE CUTTING STEEL
AISI B 1113 — SAE 1113
IN OUR NEWARK STOCK

Size, Inches	Weight per Foot, Pounds	Extra for Size	Lengths in Stock, Feet	Size, Inches	Weight per Foot, Pounds	Extra for Size	Lengths in Stock Feet
1/4	0.167	1.00	20	2 1/2	16.69	.15	20
5/16	0.261	.70	20	2 5/8	18.40	.20	20
3/8	0.376	.40	20	2 3/4	20.19	.20	20
7/16	0.511	.30	20	2 7/8	22.07	.20	20
1/2	0.668	.20	20	3	24.03	.20	20
9/16	0.845	.15	20	3 1/8	26.08	.25	20
5/8	1.04	.10	20	3 1/4	28.21	.25	20
11/16	1.26	.10	20	3 3/8	30.42	.25	20
3/4	1.50	Base	20	3 1/2	32.71	.25	20
13/16	1.76	Base	20	3 5/8	35.09	.25	20
7/8	2.04	Base	20	3 3/4	37.55	.25	20
15/16	2.35	Base	20	3 7/8	40.10	.25	20
1	2.67	Base	20	4	42.73	.25	20
1 1/16	3.01	Base	20	4 1/8	45.44	.25	20
1 1/8	3.38	Base	20	4 1/4	48.23	.25	20
1 3/16	3.77	Base	20	4 1/2	54.08	.25	20
1 1/4	4.17	Base	20	4 5/8	57.12	.35	20
1 5/16	4.60	Base	20	4 3/4	60.25	.35	20
1 3/8	5.05	Base	20	5	66.76	.35	20
1 7/16	5.52	Base	20	5 1/4	73.60	.45	20
1 1/2	6.01	Base	20	5 1/2	80.78	.45	20
1 5/8	7.05	.10	20	5 3/4	88.29	.55	20
1 3/4	8.18	.10	20	6	96.13	.55	20
1 7/8	9.39	.10	20	6 1/4	104.31	.65	20
2	10.68	.10	20	6 1/2	112.82	.65	20
2 1/8	12.06	.15	20	6 3/4	121.67	.75	20
2 1/4	13.52	.15	20	7	130.85	.75	20
2 3/8	15.06	.15	20				

A quality extra of **25c** cwt. applies.

ROUNDS—HOT ROLLED

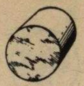
OPEN HEARTH FREE CUTTING STEEL
AISI C1120



Size, Inches	Weight, per Foot, Pounds	Extra for Size	Lengths in Stock, Feet	Size, Inches	Weight, per Foot, Pounds	Extra for Size	Lengths in Stock, Feet
1/4	0.167	1.00	Chgo.	2 3/8	15.06	.15	18
5/16	0.261	.70	18	2 1/2	16.69	.15	18
3/8	0.376	.40	18	2 5/8	18.40	.20	New'k
7/16	0.511	.30	18	2 3/4	20.19	.20	18
1/2	0.668	.20	18	2 7/8	22.07	.20	New'k
9/16	0.845	.15	Chgo.	3	24.03	.20	20
5/8	1.04	.10	18	3 1/8	26.08	.25	New'k
11/16	1.26	.10	Chgo.	3 1/4	28.21	.25	Chgo.
3/4	1.50	Base	18	3 3/8	30.42	.25	New'k
13/16	1.76	Base	New'k	3 1/2	32.71	.25	20
7/8	2.04	Base	18	3 5/8	35.09	.25	New'k
15/16	2.35	Base	New'k	3 3/4	37.55	.25	Chgo.
1	2.67	Base	18	3 7/8	40.10	.25	New'k
1 1/16	3.01	Base	Chgo.	4	42.73	.25	20
1 1/8	3.38	Base	18	4 1/4	48.23	.25	Chgo.
1 3/16	3.77	Base	New'k	4 1/2	54.08	.25	Chgo.
1 1/4	4.17	Base	18	4 3/4	60.25	.35	Chgo.
1 5/16	4.60	Base	New'k	5	66.76	.35	Chgo.
1 3/8	5.05	Base	18	5 1/4	73.60	.45	Chgo.
1 7/16	5.52	Base	New'k	5 1/2	80.78	.45	Chgo.
1 1/2	6.01	Base	18	5 3/4	88.29	.55	Chgo.
1 5/8	7.05	.10	Chgo.	6	96.13	.55	Chgo.
1 3/4	8.18	.10	18	6 1/4	104.31	.65	Chgo.
1 7/8	9.39	.10	18	6 1/2	112.82	.65	Chgo.
2	10.68	.10	18	6 3/4	121.67	.75	Chgo.
2 1/8	12.06	.15	Chgo.	7	130.85	.75	Chgo.
2 1/4	13.52	.15	18	7 1/4	140.36	.75	Chgo.
				7 1/2	150.21	.75	Chgo.

A quality extra of **10c** cwt. applies.

HOT ROLLED ROUNDS HIGH MANGANESE



AISI C1117 — SAE 1117

.14 to .20 Carbon

A High Manganese carburizing steel having excellent case and core properties for simple carburized parts not subjected to particularly severe service conditions. It has remarkable machining and forging qualities and may be hardened in oil or water depending upon conditions concerned.

IN OUR CHICAGO STOCK

Size, Inches	Weight per Ft., Pounds	Extra for Size	Lengths in stock, Feet	Size, Inches	Weight per Ft., Pounds	Extra for Size	Lengths in stock, Feet
⅜	0.376	.40	18	3 ⅛	26.08	.25	20
½	0.668	.20	18	3 ¼	28.21	.25	20
⅝	1.04	.10	18	3 ⅜	30.42	.25	20
¾	1.50	Base	18	3 ½	32.71	.25	10, 20
⅞	2.04	Base	18	3 ⅝	35.09	.25	10, 20
1	2.67	Base	18	3 ¾	37.55	.25	10, 20
1 ⅛	3.38	Base	18	4	42.73	.25	10, 20
1 ¼	4.17	Base	18	4 ¼	48.23	.25	10, 20
1 ⅜	5.05	Base	18	4 ½	54.08	.25	10, 20
1 ½	6.01	Base	18	4 ¾	60.25	.35	10, 20
1 ⅝	7.05	.10	18	5	66.76	.35	10, 20
1 ¾	8.18	.10	18	5 ¼	73.60	.45	10, 20
1 ⅞	9.39	.10	18	5 ½	80.78	.45	10, 20
2	10.68	.10	18	5 ¾	88.29	.55	10, 20
2 ⅛	12.06	.15	18	6	96.13	.55	10, 20
2 ¼	13.52	.15	18	6 ¼	104.31	.65	10, 20
2 ⅜	15.06	.15	18	6 ½	112.82	.65	10, 20
2 ½	16.69	.15	18	6 ¾	121.67	.75	10, 20
2 ⅝	18.40	.20	18	7	130.85	.75	10, 20
2 ¾	20.19	.20	18	7 ¼	140.36	.75	10, 20
2 ⅞	22.07	.20	18	7 ½	150.21	.75	10, 20
3	24.03	.20	20	8	170.90	1.10	10, 20

HOT ROLLED ROUNDS HIGH MANGANESE

AISI C1137 — SAE 1137

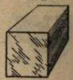
.32 to .39 Carbon

A fine quality Open Hearth free machining steel for forging and heat treating purposes other than case harding.

Size, Inches	Weight per Ft., Pounds	Extra for Size	Lengths in stock, Feet	Size, Inches	Weight per Ft., Pounds	Extra for Size	Lengths in stock, Feet
⅜	0.376	.40	New'k.	3 ⅛	26.08	.25	Chgo.
7/16	0.511	.30	Chgo.	3 ¼	28.21	.25	20
½	0.668	.20	18	3 ⅜	30.42	.25	Chgo.
⅝	1.04	.10	18	3 ½	32.71	.25	20
¾	1.50	Base	18	3 ⅝	35.09	.25	Chgo.
13/16	1.76	Base	Chgo.	3 ¾	37.55	.25	20
⅞	2.04	Base	18	3 ⅞	40.10	.25	Chgo.
1	2.67	Base	18	4	42.73	.25	20
1 1/16	3.01	Base	18	4 ⅛	45.44	.25	Chgo.
1 ⅛	3.38	Base	18	4 ¼	48.23	.25	20
1 3/16	3.77	Base	Chgo.	4 ⅜	51.11	.25	Chgo.
1 ¼	4.17	Base	18	4 ½	54.08	.25	20
1 5/16	4.60	Base	Pgh.	4 ¾	60.25	.35	20
1 ⅜	5.05	Base	18	5	66.76	.35	20
1 ½	6.01	Base	18	5 ¼	73.60	.45	20
1 ⅝	7.05	.10	18	5 ½	80.78	.45	20
1 ¾	8.18	.10	18	5 ¾	88.29	.55	20
1 ⅞	9.39	.10	18	6	96.13	.55	20
2	10.68	.10	18	6 ¼	104.31	.65	20
2 ⅛	12.06	.15	18	6 ½	112.82	.65	20
2 ¼	13.52	.15	18	6 ¾	121.67	.75	20
2 ⅜	15.06	.15	18	7	130.85	.75	20
2 ½	16.69	.15	18	7 ¼	140.36	.75	Chgo.
2 ⅝	18.40	.20	18	7 ½	150.21	.75	Chgo.
2 ¾	20.19	.20	18	7 ¾	160.39	.85	Chgo.
2 ⅞	22.07	.20	18	8	170.90	1.10	Chgo.
3	24.03	.20	20				

MISC. H.R. BARS
SPRING STEEL — DRILL ROD
OLD INISHED ARS
ALLOY BARS
HIGH STRENGTH STEEL
RAILS — BOILER TUB
TAINLESS TEEL HEETS
PLATES — ANGLES — ROUNDS
SQUARES — HEXAGONS
FLATS — STRIP
TUBING — PIPE — ELECTRODES
TOOLS SUPPLIES & MACHINERY — DATA

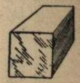
SQUARE MILD STEEL BARS



OPEN HEARTH **.15 to .20 Carbon**

Size, Inches	Weight per Foot, Pounds	Extra for Size	Lengths in Stock, Feet	Size, Inches	Weight per Foot, Pounds	Extra for Size	Lengths in Stock, Feet
3/16	0.120	2.00	New'k	1 5/8	8.98	.10	16
1/4	0.213	1.00	16	1 3/4	10.41	.10	16, 36
5/16	0.332	.70	16	1 7/8	11.95	.10	16
3/8	0.478	.40	16	2	13.60	.10	16, 36
7/16	0.651	.30	16	2 1/8	15.35	.15	Pgh.
1/2	0.85	.20	16, 36	2 1/4	17.21	.15	16
9/16	1.08	.15	16	2 1/2	21.25	.15	16, 36
5/8	1.33	.10	16, 36	2 5/8	23.43	.20	Chgo.
11/16	1.61	.10	Chgo.	2 3/4	25.71	.20	16, 20
3/4	1.91	Base	16, 36	3	30.60	.20	20
13/16	2.25	Base	Chgo.	3 1/4	35.91	.25	16, 20
7/8	2.60	Base	16, 36	3 1/2	41.65	.25	16, 20
1	3.40	Base	16, 36	3 3/4	47.81	.25	16
1 1/8	4.30	Base	16	4	54.40	.25	16, 20
1 1/4	5.31	Base	16, 36	4 1/2	68.85	.25	16, 20
1 3/8	6.43	Base	16	5	85.00	.35	16, 20
1 1/2	7.65	Base	16, 36	6	122.40	3.00	16, 20

GALVANIZED SQUARES

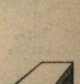


MILD STEEL

Size, Inches	Estimated Weight per Foot	Length in Stock, Feet	Size, Inches	Estimated Weight per Foot	Length in Stock, Feet
1/2	.892	16	3/4	2.006	Chgo. 16
5/8	1.394	16			

Prices subject to quotation Other sizes galvanized when required.

SQUARES



HOT ROLLED FORGING STEEL

AISI C1035 **SAE 1035**

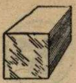
IN OUR CHICAGO STOCK

Size, Inches	Weight per Foot, Pounds	Extra for Size	Lengths in Stock, Feet	Size, Inches	Weight per Foot, Pounds	Extra for Size	Lengths in Stock, Feet
1/2	0.85	.20	18	2 1/2	21.25	.15	18
3/4	1.91	Base	18	2 3/4	25.71	.20	18
1	3.40	Base	18	3	30.60	.20	20
1 1/4	5.31	Base	18	3 1/4	35.91	.25	20
1 1/2	7.65	Base	18	3 1/2	41.65	.25	20
1 3/4	10.41	.10	18	4	54.40	.25	20
2	13.60	.10	18	5	85.00	.35	20
2 1/4	17.21	.15	18				

A quality extra of **5c** cwt. applies.

For cutting extras, see pages 219 and 220.

SQUARES



HOT ROLLED FORGING STEEL

AISI C1045 .43 to 50 Carbon SAE 1045

IN OUR CHICAGO STOCK

Size, Inches	Weight per Foot, Pounds	Extra for Size	Lengths in Stock, Feet	Size, Inches	Weight per Foot, Pounds	Extra for Size	Lengths in Stock, Feet
½	0.85	.20	New'k	2¼	17.21	.15	18
⅝	1.33	.10	New'k	2½	21.25	.15	18
¾	1.91	Base	18	2¾	25.71	.20	18
⅞	2.60	Base	18	3	30.60	.20	20
1	3.40	Base	18	3¼	35.91	.25	New'k
1⅛	4.30	Base	18	3½	41.65	.25	20
1¼	5.31	Base	18	3¾	47.81	.25	20
1⅜	6.43	Base	New'k	4	54.40	.25	20
1½	7.65	Base	18	4½	68.85	.25	New'k
1¾	10.41	.10	18	5	85.00	.35	20
2	13.60	.10	18				

A quality extra of **5c** cwt. applies.

TWISTED SQUARES

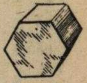
MILD STEEL—COLD TWISTED

IN OUR CHIAGO STOCK

*IN ST. LOUIS-16 FT. LENGTHS

Size, Inches	Weight per Foot, Pounds	Extra for Size	Lengths in Stock, Feet	Size, Inches	Weight per Foot, Pounds	Extra for Size	Lengths in Stock, Feet
¼	0.213	1.75	16, 36	¾	1.91	.25	16, 36
5/16	0.332	1.45	16	⅞	2.60	.25	16, 36
⅜	0.478	.70	16, 36	1	3.40	.25	16, 36
7/16	0.651	.55	16	1⅛	4.30	.25	16
*½	0.85	.45	16, 36	1¼	5.31	.25	16, 36
⅝	1.33	.35	16, 36				

HEXAGONS HOT ROLLED



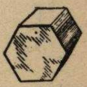
AISI C1120

OPEN HEARTH FREE CUTTING STEEL

Size, Inches	Weight per Foot, Pounds	Extra for Size	Lengths in Stock, Feet	Size, Inches	Weight per Foot, Pounds	Extra for Size	Lengths in Stock, Feet
⅜	0.414	.90	New'k	1 5/16	5.072	.125	New'k
½	0.736	.35	16	1⅜	5.567	.125	16
9/16	0 932	.35	New'k	1 7/16	6.085	.125	New'k
⅝	1.150	.20	16	1½	6.625	.125	16
11/16	1.392	.20	New'k	1⅝	7.775	.25	16
¾	1.656	.125	16	1¾	9.018	.25	16
13/16	1.944	.125	New'k	1⅞	10.352	.25	16
⅞	2.254	.125	16	2	11.778	.25	16
15/16	2.588	.125	New'k	2¼	14.907	.25	16
1	2.945	.125	16	2⅜	16.609	.25	New'k
1 1/16	3.324	.125	New'k	2½	18.403	.25	16
1⅛	3.727	.125	16	2¾	22.268	.25	16
1 3/16	4.152	.125	New'k	3	26.500	.25	16
1¼	4.601	.125	16				

A quality extra of **10c** cwt. applies.

HEXAGONS HOT ROLLED



AISI B1112

BESSEMER FREE CUTTING STEEL

16 FT. LENGTHS

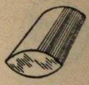
IN OUR CHICAGO STOCK

Size, Inches	Weight per Foot, Pounds	Extra for Size	Size, Inches	Weight per Foot, Pounds	Extra for Size
½	0.736	.35	1⅝	7.775	.25
⅝	1.150	.20	1¾	9.018	.25
¾	1.656	.125	1⅞	10.352	.25
⅞	2.254	.125	2	11.778	.25
1	2.945	.125	2¼	14.907	.25
1⅛	3.727	.125	2½	18.403	.25
1¼	4.601	.125	2¾	22.268	.25
1⅜	5.567	.125	3	26.500	.25
1½	6.625	.125			

A quality extra of **10c** applies.
For cutting extras see pages 219 and 220.

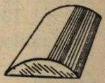
OVAL MILD STEEL BARS

IN OUR CHICAGO STOCK



Size, Inches	Weight per Foot, Pounds	Extra for Size	Lengths in Stock, Feet	Size, Inches	Weight per Foot, Pounds	Extra for Size	Lengths in Stock, Feet
1/2x1/4	.297	1.00	16	7/8x3/8	.770	.30	Newark
5/8x5/16	.464	.50	16	7/8x7/16	.909	.30	16
5/8x3/8	.568	.50	Newark	1 x7/16	1.029	.30	Newark
3/4x5/16	.550	.40	Newark	1 x1/2	1.188	.30	16
3/4x3/8	.668	.30	16	1 1/4x5/8	1.857	.30	16

HALF OVAL MILD STEEL BARS



Size, Inches	Weight per Foot, Pounds	Extra for Size	Lengths in Stock, Feet	Size, Inches	Weight per Foot, Pounds	Extra for Size	Lengths in Stock, Feet
3/8x3/32	.084	2.00	Chgo.	1 x3/8	.939	.40	Pitts.
1/2x1/8	.149	1.20	16	1 1/8x1/4	.662	.40	16
5/8x1/8	.183	1.20	Chgo.	1 1/4x3/16	.541	.50	Newark
5/8x5/32	.232	.90	16	1 1/4x1/4	.731	.40	Chgo.
5/8x3/16	.284	.90	Chgo.	1 1/4x5/16	.928	.40	16
3/4x3/16	.334	.70	16	1 1/2x5/16	1.099	.40	16
3/4x1/4	.460	.70	16	1 1/2x3/8	1.337	.40	16
7/8x3/16	.385	.70	Chgo.	1 3/4x7/16	1.819	.40	16
7/8x7/32	.455	.70	Chgo.	2 x1/2	2.376	.40	16
7/8x1/4	.527	.70	16	2 1/2x1/2	2.922	.40	16
1 x3/16	.437	.50	Chgo.	2 1/2x5/8	3.713	.40	Pitts.
1 x1/4	.594	.40	16	3 x3/4	5.347	.40	16
1 x5/16	.761	.40	Newark				

HALF ROUND MILD STEEL BARS

Size, Inches	Weight per Foot, Pounds	Extra for Size	Lengths in Stock, Feet	Size, Inches	Weight per Foot, Pounds	Extra for Size	Lengths in Stock, Feet
3/8	.188	1.75	16	1 1/4	2.086	.50	16
1/2	.334	1.25	16	1 1/2	3.004	.50	16
5/8	.522	1.00	16	1 3/4	4.089	.50	16
3/4	.751	.75	16	2	5.340	.50	16
7/8	1.022	.65	16	2 1/2	8.35	.50	Chgo.
1	1.335	.65	16	3	12.02	.50	Chgo.
1 1/8	1.690	.50	16				

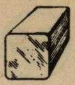
FOR

Hot Rolled and Cold Finished

ALLOY STEEL BARS

SEE PAGES 92 to 101

BILLETS



OPEN HEARTH FORGING STEEL

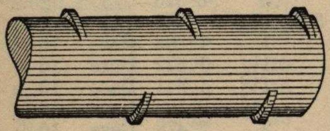
IN OUR CHICAGO STOCK

Size, Inches	Weight per Foot. Pounds	Extra for Size	Lengths in Stock, Feet	
			.18 to .23 Carbon AISI C1020 SAE 1020	.32 to .38 Carbon AISI C1035 SAE 1035
4x4	54.4	.10	8, 10, 12	8, 10, 12
5x5	85.0	.10	8, 10	8, 10
6x6	122.4	Base	8, 10, 12	8, 10, 12
7x7	166.6	Base	8, 10	8, 10, 12
8x8	217.6	Base	8, 10, 12	8, 10, 12
9¾x9¾	323.2	.10	8, 10	8, 10, 12
3x12	122.4	Base	12	....
4x6	81.6	.10	8, 10, 12	....
4x8	108.8	.10	8, 10, 12	....
4x10	136.0	Base	8, 10	....
4x12	163.2	Base	12	....
6x8	163.2	Base	8, 10, 12	8, 10
6x12	244.8	Base	8, 10	....

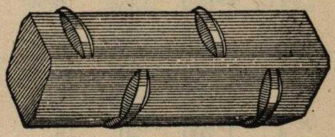
Cutting extras quoted on application.

DEFORMED BARS

A. S. T. M. A-15-39 Intermediate Grade



S162



S132

ROUND

Size, Inches	Area in Sq. In.	Weight Per Foot, Pounds	Extra for Size
*¼	......	.165	1.00
⅜	.11	.376	.40
½	.19	.668	.20
⅝	.30	1.043	.10
¾	.44	1.502	Base
⅞	.60	2.044	Base
1	.78	2.67	Base

*In Our Newark Stock.

Stock Lengths 20, 40, 60 Ft.

SQUARE

Size, Inches	Area in Sq. In.	Weight Per Foot, Pounds	Extra for Size
1	1.00	3.400	Base
1⅛	1.26	4.303	Base
1¼	1.55	5.313	Base

Stock Lengths 20, 40 Ft.

HEXAGON CHISEL STEEL

IN OUR PITTSBURGH STOCK

Open Hearth Quality **Carbon Range .70-.85**

Size, Inches	Lengths in stock, feet	Weight Per Foot, Pounds	Extra For Size
½	20	.736	.35
⅝	20	1.150	.20
¾	20	1.656	.125
⅞	20	2.25	.125

Size, Inches	Lengths in stock, feet	Weight Per Foot, Pounds	Extra For Size
1	20	2.94	.125
1⅛	20	3.73	.125
1¼	20	4.60	.125

QUANTITY EXTRAS (Per Size)

1000 lbs. and over...	Base	499 lbs. to 300 lbs.....	$0.75 cwt.
999 lbs. to 500 lbs..	$0.25 cwt.	Less than 300 lbs.....	1.25 cwt.
Combined order under 100 lbs.,	2.50 cwt.	Annealing,	1.50 cwt.

SPRING STEEL FLATS

HOT ROLLED—OPEN HEARTH

AISI C1095 — SAE 1095 — Round Edge

Size, Inches	Weight per Foot, Pounds	Extra for Size	Lengths in Stock. Feet
1-16x ⅜	.083	2.40	Chgo.
½	.106	1.55	16
⅝	.138	1.05	16
¾	.159	.90	16
⅞	.186	.80	16
1	.213	.65	16
1¼	.266	.65	16
1½	.319	.50	16
1¾	.372	.50	16
2	.426	.50	16
2½	.533	.45	16
3-32x ½	.155	1.25	Chgo.
¾	.235	.75	Chgo.
1	.318	.55	Chgo.
1¼	.399	.55	Chgo.
1½	.474	.45	Chgo.
1-8x ⅜	.151	1.60	Chgo.
½	.204	1.10	16
⅝	.258	.75	16
¾	.311	.60	16
⅞	.364	.50	16
1	.417	.40	16
1¼	.523	.40	16
1½	.629	.35	16
1¾	.736	.35	16
2	.842	.35	16
2½	1.054	.30	16
3	1.267	.25	16
3½	1.479	.20	16
4	1.700	.20	16
3-16x ⅜	.221	1.45	Chgo.
½	.301	1.05	16
⅝	.381	.70	16
¾	.460	.55	16
⅞	.540	.45	16
1	.620	.35	16
1⅛	.699	.35	Chgo.
1¼	.779	.35	16
1½	.938	.30	16
1¾	1.098	.30	16
2	1.257	.30	16
2¼	1.416	.25	Chgo.
2½	1.576	.25	16
3	1.895	.20	16
3½	2.213	.15	Chgo.
4	2.532	.15	16
7-32x2	1.463	.25	St. P.
1-4x ½	.393	.90	16
⅝	.499	.60	Chgo.
¾	.605	.40	16
⅞	.712	.30	16
1	.818	.15	16
1⅛	.924	.15	Chgo.
1¼	1.030	.15	16
1⅜	1.137	.15	Chgo.
1½	1.243	.15	16
1¾	1.455	.15	16
2	1.668	15	16
2¼	1.880	.15	Chgo.
2½	2.093	.15	16
2¾	2.305	.15	Chgo.
3	2.518	.15	16
3½	2.943	.15	Chgo.
4	3.368	.15	16
4½	3 793	.15	Chgo.
1-4x 5	4.218	.15	16
5½	4.643	.15	Chgo.
6	5.068	.15	16
No.2x1¾	1.690	.15	Chgo.
2	1.930	.15	Chgo.
9-32x1½	1.394	.15	St. P.
2	1.872	.15	St. P.
2¼	2.111	.15	St. P.
2¾	2.589	.15	St. P.
3½	3.306	.15	St. P.
5-16x1	1.013	.15	16
1¼	1.278	.15	16
1⅜	1.411	.15	16
1½	1.544	.15	16
1¾	1.809	.15	16
2	2.075	.15	16
2¼	2.341	.15	16
2½	2.606	.15	16
2¾	2.872	.15	St. P.
3	3.138	.15	16
3½	3.669	.15	Chgo.
4	4.200	.15	16
5	5.263	.15	Chgo.
6	6.325	.15	Chgo.
3-8x ¾	.884	.30	Chgo.
1	1.203	Base	16
1¼	1.522	Base	16
1½	1.841	Base	16
1¾	2.159	Base	16
2	2.478	Base	16
2¼	2.797	Base	Chgo.
2½	3.116	Base	16
2¾	3.434	Base	St. P.
3	3.753	Base	16
3½	4.391	Base	Chgo.
4	5.028	Base	16
4½	5.666	Base	Chgo.
5	6.303	Base	16
6	7.578	Base	16
7-16x2	2.877	Base	Chgo.
2½	3.621	Base	Chgo.
3	4.365	Base	Chgo.
3½	5.108	Base	Chgo.
4	5.852	Base	Chgo.
4½	6.596	Base	Chgo.
5	7.340	Base	Chgo.
5½	8.083	Base	Chgo.
6	8.827	Base	Chgo.
1-2x 1½	2.422	Base	16
1¾	2.847	Base	Chgo.
2	3.272	Base	16
2½	4.122	Base	Chgo.
3	4.972	Base	16
3½	5.822	Base	16
4	6.672	Base	16
4½	7.522	Base	Chgo.
5	8.372	Base	16
5½	9.222	Base	Chgo.
6	10.072	Base	16
5-8x 2	4.050	Base	Chgo.
3	6.175	Base	Chgo.
4	8.300	Base	Chgo.
5	10.425	Base	Chgo.
6	12.550	Base	Chgo.

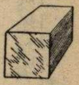
SPRING STEEL ROUNDS

HOT ROLLED—OPEN HEARTH

AISI C1095—SAE 1095

Size, Inches	Weight per Foot, Pounds	Extra for Size	Lengths in Stock, Feet	Size, Inches	Weight per Foot, Pounds	Extra for Size	Lengths in Stock, Feet
3/16	.094	2.00	16	7/8	2.040	Base	16
1/4	.167	1.00	16	15/16	2.350	Base	Chgo.
5/16	.261	.70	16	1	2.670	Base	16
3/8	.376	.40	16	1 1/16	3.010	Base	Chgo.
7/16	.511	.30	16	1 1/8	3.380	Base	16
1/2	.668	.20	16	1 3/16	3.760	Base	Chgo.
9/16	.845	.15	16	1 1/4	4.170	Base	16
5/8	1.040	.10	16	1 3/8	5.050	Base	Chgo.
11/16	1.260	.10	Chgo.	1 1/2	6.010	Base	16
3/4	1.500	Base	16	1 5/8	7.050	.10	Chgo.
13/16	1.760	Base	Chgo.	1 3/4	8.180	.10	Chgo.

SPRING STEEL SQUARES



HOT ROLLED—OPEN HEARTH

AISI C1095—SAE 1095

IN OUR CHICAGO STOCK

Size, Inches	Weight per Foot, Pounds	Extra for Size	Lengths in stock Feet	Size, Inches	Weight per Foot, Pounds	Extra for Size	Lengths, in Stock Feet
1/4	.213	1.00	16	5/8	1.328	.10	16
5/16	.332	.70	16	3/4	1.913	Base	16
3/8	.478	.40	16	7/8	2.603	Base	16
7/16	.651	.30	16	1	3.400	Base	16
1/2	.850	.20	16	1 1/8	4.303	Base	16
9/16	1.076	.15	16	1 1/4	5.313	Base	16

TOOL STEEL SHEETS

(SHEET SPRING STEEL)

SEMI-ANNEALED

IN OUR CHICAGO STOCK

These sheets have a smooth, blue finish, free from grease, and are suitable for making templets, small tools, saws, knives, scrapers, blades, etc. It will fill the requirement where a high quality, thin tool steel is needed. It carries a carbon content of about 1.00% carbon. Will harden in oil or water depending upon the degree of hardness desired. For further information relative to the treatment of this steel, communicate with our General Office.

STOCK SIZES. WIDTH 18″ LENGTHS 5′-6′, RANDOM.

B. W. Gage or Inches	Decimal Equivalent	Gage Extra Per Lb.,	Weight Per Foot, 18 In. Width	B. W. Gage or Inches	Decimal Equivalent	Gage Extra Per Lb., Cents	Weight Per Foot, 18 In. Width
1/4	.250	Base	15.2	#18	.049	3.0	3.0
3/16	.1875	Base	11.5	#19	.042	4.0	2.6
5/32	.156	Base	9.6	#20	.035	4.0	2.2
#10	.134	Base	8.2	#21	.032	5.0	2.0
#11	.120	Base	7.4	#22	.028	6.0	1.7
#12	.109	Base	6.7	#23	.025	8.0	1.5
#13	.095	Base	5.8	#24	.022	10.0	1.4
#14	.083	Base	5.0	#25	.020	12.0	1.3
#15	.072	0.5	4.4	#26	.018	14.0	1.2
#16	.065	1.0	4.0	#27	.016	16.0	1.1
#17	.058	3.0	3.6	#28	.014	18.0	1.0

Our spring steel conforms to the chemical analysis of the AISI and SAE 1095 specifications and it is recommended that the fabricated parts before assembly be heat treated in order to obtain the most satistfactory results. Heat treatment should consist of quenching in oil from 1500/1550°F. or quenching in water from 1425/1475°F. followed by tempering. The tempering temperature will depend upon the final hardness desired.

SPRING STEEL — DRILL ROD
OLD INISHED ARS
ALLOY BARS
HIGH STRENGTH STEEL
RAILS BOILER TU
TAINLESS TEEL HEETS
PLATES — ANGLES — ROUNDS
SQUARES — HEXAGONS
FLATS — STRIP
TUBING — PIPE — ELECTRODES
TOOLS SUPPLIES & MACHINERY — DATA

ROUND CARBON STEEL DRILL RODS

A splendid general purpose drill rod. Every rod is highly polished and free from surface decarburization. The accuracy, uniformity, surface finish, straightness and machining qualities are unexcelled. The steel is sound and homogeneous and will harden well. Ample warehouse stocks guarantee speedy delivery of any size or quantity.

POLISHED. 3-Foot Lengths *Also in 12-Foot Lengths
(Intermediate Sizes and Special Lengths Made to Order)

Size	Decimal	Pounds Per Ft.	List Price Per Lb.	Size	Decimal	Pounds Per Ft.	List Price Per Lb.
2	2.000	10.681	$0.55	R	.339	.308	$0.60
1⅝	1.625	7.050	.55	Q	.332	.294	.60
1½	1.500	6.008	.55	21/64	.3281	.287	.60
1 7/16	1.4375	5.512	.55	P	.323	.277	.60
1⅜	1.375	5.049	.55	O	.316	.271	.60
1 5/16	1.3125	4.600	.55	* 5/16	.3125	.260	.60
1¼	1.250	4.167	.55	N	.302	.242	.65
1 3/16	1.1875	3.771	.55	19/64	.2968	.234	.65
1⅛	1.125	3.375	.55	M	.295	.233	.65
1 3/32	1.0937	3.194	.55	L	.290	.225	.65
1 1/16	1.0625	3.010	.55	* 9/32	.2812	.213	.65
1 1/32	1.0312	2.833	.55	K	.281	.212	.65
*1	1.000	2.666	.55	J	.277	.205	.65
31/32	.9687	2.531	.55	I	.272	.198	.65
15/16	.9375	2.333	.55	H	.266	.188	.65
29/32	.9062	2.188	.55	17/64	.2656	.187	.65
* ⅞	.875	2.042	.55	G	.261	.181	.65
55/64	.8593	1.970	.55	F	.257	.174	.65
27/32	.8437	1.896	.55	E	.250	.167	.65
53/64	.8281	1.828	.55	* ¼	.250	.167	.65
13/16	.8125	1.750	.55	D	.246	.161	.70
51/64	.7968	1.708	.55	C	.242	.154	.70
25/32	.7812	1.625	.55	B	.238	.150	.70
49/64	.7656	1.562	.55	15/64	.2343	.147	.70
* ¾	.750	1.500	.55	A	.234	.147	.70
47/64	.7343	1.438	.55	1	.227	.138	.75
23/32	.7187	1.375	.55	2	.219	.129	.75
45/64	.7031	1.312	.55	* 7/32	.2187	.129	.75
11/16	.6875	1.250	.55	3	.212	.121	.80
43/64	.6718	1.187	.55	4	.207	.115	.80
21/32	.6562	1.145	.55	5	.204	.109	.80
41/64	.6406	1.104	.55	13/64	.2031	.109	.80
* ⅝	.625	1.042	.55	6	.201	.107	.85
39/64	.6093	1.000	.55	7	.199	.106	.85
19/32	.5937	.937	.55	8	.197	.104	.85
37/64	.5781	.891	.55	9	.194	.099	.85
* 9/16	.5625	.844	.55	10	.191	.096	.85
35/64	.5468	.797	.55	11	.188	.094	.85
17/32	.5312	.750	.55	* 3/16	.1875	.094	.85
33/64	.5156	.709	.55	12	.185	.092	.95
* ½	.500	.667	.55	13	.182	.089	.95
31/64	.4843	.625	.60	14	.180	.087	.95
15/32	.4687	.583	.60	15	.178	.085	.95
29/64	.4531	.542	.60	16	.175	.082	.95
* 7/16	.4375	.510	.60	17	.172	.079	.95
27/64	.4218	.472	.60	11/64	.1718	.078	1.05
Z	.413	.458	.60	18	.168	.076	1.05
13/32	.4062	437	.60	19	.164	.072	1.05
Y	.404	427	.60	20	.161	.069	1.05
X	.397	.421	.60	21	.157	.066	1.05
25/64	.3906	.407	.60	* 5/32	.1562	.066	1.05
W	.386	.400	.60	22	.155	.065	1.15
V	.377	.383	.60	23	.153	.063	1.15
* ⅜	.375	.375	.60	24	.151	.061	1.15
U	.368	.362	.60	25	.148	.059	1.15
23/64	.3593	.344	.60	26	.146	.057	1.15
T	.358	.342	.60	27	.143	.055	1.15
S	.348	.325	.60	9/64	.1406	.052	1.15
11/32	.3437	.313	.60	28	.139	.052	1.30

ROUND DRILL RODS (Concluded)

Size	Decimal	Pounds Per Ft.	List Price Per Lb.	Size	Decimal	Pounds Per Ft.	List Price Per Lb.
29	.134	.048	$1.30	54	.055	.008	$2.75
30	.127	.043	1.30	55	.050	.007	2.75
* 1/8	.125	.042	1.30	3/64	.0468	.006	3.50
31	.120	.039	1.45	56	.045	.006	3.50
32	.115	.036	1.45	57	.042	.005	3.50
33	.112	.034	1.45	58	.041	.0045	3.50
34	.110	.032	1.45	59	.040	.0043	3.50
7/64	.1093	.031	1.45	60	.039	.0040	5.00
35	.108	.031	1.60	61	.038	.0038	5.00
36	.106	.030	1.60	62	.037	.0037	5.00
37	.103	.029	1.60	63	.036	.0035	5.00
38	.101	.028	1.60	64	.035	.0033	5.00
39	.099	.026	1.60	65	.033	.0029	5.00
40	.097	.025	1.60	66	.032	.0027	5.00
41	.095	.024	1.60	1/32	.0312	.0026	5.00
3/32	.0937	.023	1.75	67	.031	.0025	5.00
42	.092	.023	1.75	68	.030	.0024	7.50
43	.088	.021	1.75	69	.029	.0023	7.50
44	.085	.019	1.75	70	.027	.0020	7.50
45	.081	.018	1.75	71	.026	.0018	7.50
46	.079	.017	1.75	72	.024	.0015	11.00
5/64	.0781	.017	1.75	73	.023	.0014	11.00
47	.077	.016	2.25	74	.022	.0013	11.00
48	.075	.015	2.25	75	.020	.0011	17.00
49	.072	.014	2.25	76	.018	.0009	17.00
50	.069	.013	2.25	77	.016	.0007	35.00
51	.066	.012	2.25	1/64	.0156	.0007	35.00
52	.063	.011	2.25	78	.015	.0006	35.00
1/16	.0625	.010	2.25	79	.014	.0005	35.00
53	.058	.009	2.75	80	.013	.0004	35.00

*These sizes are also carried in 12′ lengths.

HIGH SPEED DRILL RODS

Polished Rounds 3 Ft. Lengths

Size	Decimal	Pounds Per Ft.	List Price Per Lb.	Size	Decimal	Pounds Per Ft.	List Price Per Lb.
1/16″	.0625	.0161	6.50	21/64″	.3281	.3187	1.70
5/64	.0781	.018	5.00	11/32	.3437	.3497	1.70
3/32	.0937	.0259	5.00	23/64	.3593	.3822	1.70
7/64	.1093	.035	3.40	3/8	.375	.4164	1.65
1/8	.125	.0463	3.00	25/64	.3906	.4517	1.65
9/64	.1406	.0585	2.70	13/32	.4062	.4886	1.65
5/32	.1562	.0722	2.45	27/64	.4218	.5268	1.65
11/64	.1718	.0874	2.45	7/16	.4375	.5667	1.65
3/16	.1875	.1041	2.10	15/32	.4687	.6505	1.65
13/64	.2031	.1221	1.95	1/2	.500	.740	1.60
7/32	.2187	.1416	1.85	17/32	.5312	.8304	1.60
15/64	.2343	.1625	1.80	9/16	.5625	.937	1.60
1/4	.250	.1851	1.75	5/8	.625	1.157	1.55
17/64	.2656	.2089	1.75	3/4	.750	1.666	1.55
9/32	.2812	.2341	1.75	7/8	.875	2.267	1.55
5/16	.3125	.2891	1.70	1	1.000	2.958	1.50

HEXAGON DRILL RODS

Carbon Steel Lime Drawn Quality

3 Ft. Lengths

Size	Pounds per Ft.	List Price per Lb.	Size	Pounds per Ft.	List Price Per Lb.	Size	Pounds per Ft.	List Price per Lb.
1/4″	.184	$0.65	5/16″	.288	$0.60	3/8″	.414	$0.60

OLD
INISHED
ARS
ALLOY BARS
HIGH
STRENGT
STEEL
RAILS
BOILER TUB
TAINLESS
TEEL
HEETS
PLATES
ANGLES
ROUNDS
SQUARES
HEXAGONS
FLATS
STRIP
TUBING
PIPE
ELECTRODES
TOOLS
SUPPLIES &
MACHINERY
DATA

SQUARE DRILL RODS

Carbon Steel Lime Drawn Quality

3 Ft. Lengths

Size	Pounds per Foot	List Price per Pound	Size	Pounds per Foot	List Price per Pound
1/16"	.0132	$2.25	13/32"	.561	$0.60
3/32	.030	1.75	7/16	.651	.60
1/8	.053	1.30	1/2	.850	.55
5/32	.083	1.05	9/16	1.076	.55
3/16	.120	.85	5/8	1.328	.55
7/32	.163	.75	11/16	1.607	.55
1/4	.212	.65	3/4	1.913	.55
9/32	.269	.65	13/16	2.245	.55
5/16	.332	.60	7/8	2.603	.55
11/32	.402	.60	15/16	2.988	.55
3/8	.478	.60	1	3.400	.55

FLAT DRILL RODS

Carbon Steel Lime Drawn Quality

3 Ft. Lengths

Size	Pounds per Foot	List Price per Pound	Size	Pounds per Foot	List Price per Pound
1-16"x1/8"	.0266	$2.25	3-16"x1/2"	.3188	$0.70
x3/16"	.0398	2.15	x3/4"	.4781	.70
x1/4"	.0531	2.05	x1"	.6375	.70
x5/16"	.0664	2.05	1-4"x5/16"	.2656	.65
x3/8"	.0797	2.05	x3/8"	.3188	.65
x7/16"	.0930	2.00	x7/16"	.3719	.60
x1/2"	.1063	2.00	x1/2"	.4250	.60
3-32"x1/4"	.0797	1.65	x3/4"	.6375	.60
1-8"x3/16"	.0797	1.30	x7/8"	.7438	.60
x1/4"	.1063	1.20	x1"	.8500	.60
x5/16"	.1328	1.20	5-16"x3/8"	.3984	.60
x3/8"	.1594	1.20	x7/16"	.4648	.60
x1/2"	.2125	1.15	x1/2"	.5313	.60
x5/8"	.2656	1.15	x3/4"	.7969	.60
x3/4"	.3188	1.15	x1"	1.0630	.60
x1"	.4250	1.15	3-8"x7/16"	.5578	.60
5-32"x3/8"	.1992	.95	x1/2"	.6375	.60
3-16"x1/4"	.1594	.75	x3/4"	.9563	.60
x5/16"	.1992	.75	x1"	1.2750	.60
x3/8"	.2391	.75			

COLD FINISHED ROUNDS

SHAFTING QUALITY

Smooth Finish, Close to Size, True to Shape and Straight.

Size, Ins.	Weight per ft., Pounds	Extra for size	Lengths in Stock, Feet
1/16	.010	3.00	12
5/64	.016	3.00	12
3/32	.023	3.00	12
7/64	.032	2.50	12
1/8	.042	1.30	12
9/64	.053	1.30	12
5/32	.065	1.30	12
11/64	.079	1.30	12
3/16	.094	1.10	12
13/64	.109	1.10	12
7/32	.128	1.10	12
15/64	.147	1.10	12
1/4	.167	1.00	12, 16
17/64	.189	1.00	12
9/32	.211	1.00	12
19/64	.235	1.00	12
5/16	.261	.90	12
21/64	.288	.90	12
11/32	.316	.90	12
23/64	.345	.90	12
3/8	.376	.85	12, 16
25/64	.405	.85	12
13/32	.441	.85	12
27/64	.476	.85	12
7/16	.511	.85	12, 16
29/64	.549	.85	12
15/32	.587	.85	12
31/64	.627	.85	12
1/2	.668	.80	12, 14, 16, 20
33/64	.710	.80	12
17/32	.754	.80	12
9/16	.845	.80	12, 16
37/64	.893	.80	12
19/32	.942	.80	12
39/64	.992	.80	12
5/8	1.04	.70	12, 16, 20
41/64	1.10	.70	12
21/32	1.15	.70	12
43/64	1.21	.70	Chgo.
11/16	1.26	.60	12, 16
45/64	1.32	.60	Chgo.
23/32	1.38	.60	12
47/64	1.44	.60	12
3/4	1.50	.60	12, 16, 20
49/64	1.57	.60	Chgo.
25/32	1.63	.60	12
51/64	1.70	.60	12
13/16	1.76	.55	12, 16
27/32	1.90	.55	12
7/8	2.04	.55	12, 16, 20
57/64	2.12	.55	12

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COLD FINISHED BARS
ALLOY BARS
HIGH STRENGT
STEEL
RAILS
BOILER TU
TAINLESS
TEEL
HEETS
PLATES
ANGLES
ROUNDS
SQUARES
HEXAGONS
FLATS
STRIP
TUBING
PIPE
ELECTRODES
TOOLS
SUPPLIES &
MACHINERY
DATA

COLD FINISHED ROUNDS—(Cont.)

SHAFTING QUALITY

Size, Ins.	Weight per ft., Pounds	Extra for size	Lengths in Stock, Feet
29/32	2.19	.55	12
15/16	2.35	.55	12, 16
31/32	2.51	.55	12
63/64	2.59	.55	12
1	2.67	.55	12, 16, 20,
1 1/64	2.76	.55	Chgo.
1 1/32	2.84	.55	12
1 1/16	3.01	.55	16
1 3/32	3.20	.55	Chgo.
1 1/8	3.38	.55	12, 16, 20,
1 3/16	3.77	.55	12, 16, 20,
1 7/32	3.97	.55	Chgo.
1 1/4	4.17	.55	12, 16, 20
1 17/64	4.28	.55	Chgo.
1 5/16	4.60	.55	12, 16, 20
1 3/8	5.05	.55	12, 16, 20,
1 7/16	5.52	.55	12, 14, 16, 20
1 1/2	6.01	.60	12, 16, 20
1 9/16	6.52	.60	12, 16, 20
1 5/8	7.05	.60	12, 16
1 11/16	7.60	.60	12, 16, 20
1 3/4	8.18	.60	12, 16, 20
1 13/16	8.77	.60	12, 16, 20
1 7/8	9.39	.60	12, 16, 20
1 15/16	10.02	.60	12, 16, 20
2	10.68	.60	12, 16, 20
2 1/16	11.36	.65	12, 16, 20
2 1/8	12.06	.65	12, 16, 20
2 3/16	12.78	.65	12, 16, 20
2 1/4	13.52	.65	12, 16, 20
2 5/16	14.28	.65	16, 20
2 3/8	15.06	.65	12, 16, 20
2 7/16	15.87	.65	12, 16, 20
2 1/2	16.69	.65	12, 16, 20
2 9/16	17.53	.80	12, 16, 20
2 5/8	18.40	.80	12, 16, 20
2 11/16	19.29	.80	12, 16, 20
2 3/4	20.19	.80	12, 16, 20
2 13/16	21.13	.80	20
2 7/8	22.07	.80	12, 20
2 15/16	23.04	.80	12, 16, 20
3	24.03	.80	12, 16, 20
3 1/16	25.05	.90	12, 20
3 1/8	26.08	.90	12, 16, 20
3 3/16	27.13	.90	12, 16, 20
3 1/4	28.21	.90	12, 16, 20
3 5/16	29.30	.90	12,
3 3/8	30.42	.90	12, 20
3 7/16	31.55	1.00	12, 16, 20
3 1/2	32.71	1.00	12, 16, 20
3 9/16	33.89	1.00	Chgo.

(Concluded on following page)

COLD FINISHED ROUNDS—(Concl.)

SHAFTING QUALITY

Size, Ins.	Weight per ft., Pounds	Extra for size	Lengths in Stock, Feet
3⅝	35.09	1.00	20
3¹¹⁄₁₆	36.31	1.00	16, 20
3¾	37.55	1.00	12, 16, 20
3¹³⁄₁₆	38.81	1.15	Chgo.
3⅞	40.10	1.15	12, 20
3¹⁵⁄₁₆	41.40	1.15	12, 16, 20
4	42.73	1.15	12, 16, 20
4¹⁄₁₆	44.07	1.15	Chgo.
4⅛	45.44	1.15	20
4³⁄₁₆	46.83	1.25	20
4¼	48.23	1.25	12, 16, 20
4⁵⁄₁₆	49.66	1.25	Chgo.
4⅜	51.11	1.25	20
4⁷⁄₁₆	52.58	1.25	12, 16, 20
4½	54.08	1.35	20
4⁹⁄₁₆	55.59	1.35	Chgo.
4⅝	57.12	1.35	20
4¹¹⁄₁₆	58.68	1.35	10, 20
4¾	60.25	1.35	10, 20
4⅞	63.46	1.35	Chgo.
4¹⁵⁄₁₆	65.10	1.45	16, 20
5	66.76	1.45	10, 20
5¹⁄₁₆	68.44	1.45	Chgo.
5⅛	70.14	1.45	20
5³⁄₁₆	71.86	1.45	Chgo.
5¼	73.60	1.45	12, 20
5⁵⁄₁₆	75.36	1.45	20
5⅜	77.15	1.45	Chgo.
5⁷⁄₁₆	78.95	1.95	16, 20
5½	80.78	1.95	10, 20
5⅝	84.48	1.95	Chgo.
5¾	88.29	1.95	20
5⅞	92.17	1.95	20
5¹⁵⁄₁₆	94.14	2.40	16, 20
6	96.13	2.40	10, 20
6¼	104.31	2.40	20
6½	112.82	Special	10, 20
6¾	121.67	Special	Chgo.
7	130.85	Special	20
7½	150.21	Special	Chgo.
8	170.90	Special	16
8½	192.90	Special	Chgo.
9	216.30	Special	Chgo.
10	267.00	Special	Chgo.

For cutting and boxing extras, see pages 220 and 221.

COLD FINISHED ROUNDS

AISI C1019

C1019 is a superior carburizing steel. It is recommended for its uniformity of case, strength of core, and machining properties. It will machine satisfactorily at approximately 120 surface feet per minute and is recommended for all carburized hardened parts not requiring the full strength of alloy steels.

Size, Ins.	Wt. Per Ft.	Extra for Size	Lengths in Stock, Feet
7/64	.032	2.50	Chgo.
1/8	.042	1.30	12
9/64	.053	1.30	Chgo.
5/32	.065	1.30	Chgo.
3/16	.094	1.10	Chgo.
7/32	.128	1.10	Chgo.
1/4	.167	1.00	16
9/32	.211	1.00	Chgo.
5/16	.261	.90	16
21/64	.288	.90	Chgo.
11/32	.316	.90	Chgo.
3/8	.376	.85	16
13/32	.441	.85	Chgo.
7/16	.511	.85	12
15/32	.587	.85	Chgo.
1/2	.668	.80	16
33/64	.710	.80	Chgo.
17/32	.754	.80	Chgo.
9/16	.845	.80	Chgo.
37/64	.893	.80	Chgo.
19/32	.942	.80	Chgo.
5/8	1.04	.70	16
41/64	1.10	.70	Chgo.
11/16	1.26	.60	Chgo.
45/64	1.32	.60	Chgo.
47/64	1.44	.60	Chgo.
3/4	1.50	.60	16
25/32	1.63	.60	Chgo.
13/16	1.76	.55	Chgo.
27/32	1.90	.55	Chgo.
7/8	2.04	.55	16
57/64	2.12	.55	Chgo.
15/16	2.35	.55	16
1	2.67	.55	16, 20
1 1/64	2.76	.55	Chgo.
1 1/16	3.01	.55	16
1 1/8	3.38	.55	16
1 3/16	3.77	.55	Chgo.
1 1/4	4.17	.55	16
1 5/16	4.60	.55	Chgo.
1 3/8	5.05	.55	16
1 7/16	5.52	.55	16, 20
1 1/2	6.01	.60	16
1 9/16	6.52	.60	Chgo.
1 5/8	7.05	.60	16
1 11/16	7.60	.60	16, 20
1 3/4	8.18	.60	12, 16, 20
1 13/16	8.77	.60	12, 16, 20
1 7/8	9.39	.60	12, 16, 20
1 15/16	10.02	.60	12, 16, 20
2	10.68	.60	12, 16, 20
2 1/16	11.36	.65	12, 16, 20
2 1/8	12.06	.65	12, 16, 20
2 3/16	12.78	.65	16, 20
2 1/4	13.52	.65	12, 16, 20
2 5/16	14.28	.65	16, 20
2 3/8	15.06	.65	20
2 7/16	15.87	.65	16, 20, 24
2 1/2	16.69	.65	16, 20, 24
2 9/16	17.53	.80	20
2 5/8	18.40	.80	20
2 11/16	19.29	.80	16, 20
2 3/4	20.19	.80	16, 20
2 13/16	21.13	.80	20
2 7/8	22.07	.80	20
2 15/16	23.04	.80	16, 20, 24
3	24.03	.80	16, 20
3 1/16	25.04	.90	20
3 1/8	26.08	.90	16, 20
3 3/16	27.13	.90	20
3 1/4	28.21	.90	16, 20, 24
3 5/16	29.30	.90	20
3 3/8	30.42	.90	20
3 7/16	31.55	1.00	18, 20, 24
3 1/2	32.71	1.00	20
3 9/16	33.89	1.00	Chgo.
3 5/8	35.09	1.00	20
3 11/16	36.31	1.00	16, 20, 24
3 3/4	37.55	1.00	20
3 13/16	38.81	1.15	Chgo.
3 7/8	40.10	1.15	20
3 15/16	41.40	1.15	18, 20, 24
4	42.73	1.15	20
4 1/16	44.07	1.15	Chgo.
4 1/8	45.44	1.15	20
4 3/16	46.83	1.25	20
4 1/4	48.23	1.25	12, 16, 20
4 5/16	49.66	1.25	Chgo.
4 3/8	51.11	1.25	20
4 7/16	52.58	1.25	18, 20
4 1/2	54.08	1.35	20
4 9/16	55.59	1.35	Chgo.

For cutting and boxing extras, see pages 220 and 221.

(Concluded on following page)

COLD FINISHED ROUNDS

AISI C1019

(Concluded)

Size, Ins.	Wt. Per Ft.	Extra For Size	Lengths in Stock, Feet	Size, Ins.	Wt. Per Ft.	Extra For Size	Lengths in Stock, Feet
4 5/8	57.12	1.35	20	5 5/8	84.49	1.95	Chgo.
4 11/16	58.68	1.35	20	5 3/4	88.29	1.95	20
4 3/4	60.25	1.35	20	5 7/8	92.17	1.95	20
4 7/8	63.46	1.35	Chgo.	5 15/16	94.14	2.40	20
4 15/16	65.10	1.45	20	6	96.13	2.40	20
5	66.76	1.45	20	6 1/4	104.31	2.40	20
5 1/16	68.44	1.45	Chgo.	6 1/2	112.82	Spec.	20
5 1/8	70.14	1.45	20	6 3/4	121.67	Spec.	Chgo.
5 3/16	71.86	1.45	Chgo.	7	130.85	Spec.	12, 16
5 1/4	73.60	1.45	20	7 1/2	150.21	Spec.	12, 16
5 5/16	75.36	1.45	20	8	170.90	Spec.	12, 16
5 3/8	77.15	1.45	Chgo.	9	216.30	Spec.	Chgo.
5 7/16	78.95	1.95	20	10	267.00	Spec.	Chgo.
5 1/2	80.78	1.95	20				

COLD FINISHED ROUNDS TURNED AND POLISHED SHAFTING

AISI C1019

Size, Inches	Weight per Foot, Pounds	Extra for Size and Finish	Stock Lengths, Feet	Size, Inches	Weight per Foot, Pounds	Extra for Size and Finish	Stock Lengths, Feet
1 3/16	3.77	1.60	16, 20	2 3/16	12.78	1.10	16, 20
1 1/4	4.17	1.60	Chgo.	2 1/4	13.52	1.10	Chgo.
1 7/16	5.52	1.60	16, 20	2 5/16	14.28	1.10	Chgo.
1 1/2	6.01	1.65	Chgo.	2 3/8	15.06	1.10	Chgo.
1 9/16	6.52	1.40	Chgo.	2 7/16	15.87	1.10	16, 20
1 5/8	7.05	1.40	Chgo.	2 1/2	16.69	1.10	Chgo.
1 11/16	7.60	1.40	16, 20	2 9/16	17.53	1.25	Chgo.
1 3/4	8.18	1.40	Chgo.	2 5/8	18.40	1.25	Chgo.
1 7/8	9.39	1.40	Chgo.	2 11/16	19.29	1.25	16, 20
1 15/16	10.02	1.05	16, 20	2 3/4	20.19	1.25	Chgo.
2	10.68	1.05	Chgo.	2 7/8	22.07	1.25	Chgo.
2 1/8	12.06	1.10	Chgo.				

For cutting and boxing extras, see pages 220 and 221.

For AISI and SAE SPECIFICATIONS see pages 194 to 205.

For AVERAGE PHYSICAL PROPERTIES see pages 206 to 215.

ALLOY BARS
HIGH STRENGTH STEEL
RAILS — BOILER TU
TAINLESS TEEL HEETS
PLATES — ANGLES — ROUNDS
SQUARES — HEXAGONS
FLATS — STRIP
TUBING — PIPE — ELECTRODES
TOOLS SUPPLIES & MACHINERY — DATA

TURNED GROUND AND POLISHED SHAFTING

AISI C1019

Due to accuracy to size, concentricity and straightness, this stock is suitable for shafts operating at high speeds. May be keyseated and otherwise machined with a minimum of distortion. Special care in handling is required to prevent damage to finish and straightness.

Commercial Tolerances

1 1/8″ to 2 7/16″ Dia. Plus .000″ to Minus .002″.

2 1/2″ and larger Dia. Plus .000″ to Minus .003″.

Size, Inches	Weight per Foot, Pounds	Extra for Size, Grinding, Polishing	Lengths in Stock, Feet	Size, Inches	Weight per Foot, Pounds	Extra for Size, Grinding, Polishing	Lengths in Stock, Feet
1 1/8	3.38	2.15	16	3 5/16	29.30	1.20	Chgo.
1 3/16	3.77	1.90	20	3 3/8	30.42	1.20	Chgo.
1 1/4	4.17	1.90	20	3 7/16	31.55	1.30	Chgo.
1 5/16	4.60	1.90	20	3 1/2	32.71	1.30	Chgo.
1 3/8	5.05	1.90	20	3 9/16	33.89	1.30	Chgo.
1 7/16	5.52	1.90	16	3 5/8	35.09	1.30	Chgo.
1 1/2	6.01	1.95	20	3 11/16	36.31	1.30	Chgo.
1 9/16	6.52	1.70	Chgo.	3 3/4	37.55	1.30	Chgo.
1 5/8	7.05	1.70	Chgo.	3 13/16	38.81	1.45	Chgo.
1 11/16	7.60	1.70	20	3 7/8	40.10	1.45	Chgo.
1 3/4	8.18	1.70	20	3 15/16	41.40	1.45	Chgo.
1 13/16	8.77	1.70	20	4	42.73	1.45	Chgo.
1 1/3	9.39	1.70	Chgo.	4 1/8	45.44	1.45	Chgo.
1 15/16	10.02	1.35	20	4 3/16	46.38	1.55	Chgo.
2	10.68	1.35	20	4 1/4	48.23	1.55	Chgo.
2 1/16	11.36	1.40	20	4 3/8	51.11	1.55	Chgo.
2 1/8	12.06	1.40	20	4 7/16	52.58	1.55	Chgo.
2 3/16	12.78	1.40	20	4 1/2	54.08	1.65	Chgo.
2 1/4	13.52	1.40	20	4 5/8	57.12	1.56	Chgo.
2 5/16	14.28	1.40	Chgo.	4 11/16	58.68	1.65	Chgo.
2 3/8	15.60	1.40	Chgo.	4 3/4	60.25	1.65	Chgo.
2 7/16	15.87	1.40	20	4 1/3	63.46	1.65	Chgo.
2 1/2	16.69	1.40	Chgo.	4 15/16	65.10	1.75	Chgo.
2 9/16	17.53	1.55	Chgo.	5	66.76	1.75	Chgo.
2 5/8	18.40	1.55	Chgo.	5 1/8	70.14	1.75	Chgo.
2 11/16	19.29	1.55	20	5 1/4	73.60	1.75	Chgo.
2 3/4	20.19	1.55	Chgo.	5 5/16	75.36	1.75	Chgo.
2 13/16	21.12	1.55	Chgo.	5 7/16	78.95	2.25	Chgo.
2 1/3	22.07	1.55	Chgo.	5 1/2	80.78	2.25	Chgo.
2 15/16	23.04	1.10	20	5 5/8	84.49	2.25	Chgo.
3	24.03	1.10	Chgo.	5 3/4	88.29	2.25	Chgo.
3 1/16	25.05	1.20	Chgo.	5 1/3	92.17	2.25	Chgo.
3 1/8	26.08	1.20	Chgo.	5 15/16	94.14	2.70	Chgo.
3 3/16	27.13	1.20	Chgo.	6	96.13	2.70	Chgo.
3 1/4	28.21	1.20	Chgo.				

For cutting and boxing extras, see pages 220 and 221.

TURNED GROUND AND POLISHED SHAFTING

AISI C1040 SAE 1040

Commercial Tolerances

1″ to 2 7/16″ Dia. Plus .000 to Minus .002.
2½″ and larger Dia. Plus .000 to Minus .003.

Size, Inches	Weight per Foot, Pounds	Extra for Size, Quality, Grinding, Polishing	Lengths in Stock, Feet
1⅛	3.38	2.65	20
1 3/16	3.77	2.20	20
1¼	4.17	2.20	20
1 5/16	4.60	2.20	Chgo.
1⅜	5.05	2.20	20
1 7/16	5.52	2.20	20
1½	6.01	2.25	20
1 9/16	6.52	2.10	Chgo.
1⅝	7.05	2.10	Chgo.
1 11/16	7.60	2.10	20
1¾	8.18	2.10	20
1 13/16	8.77	2.10	20
1⅞	9.39	2.10	Chgo.
1 15/16	10.02	1.65	20
2	10.68	1.65	20
2 1/16	11.36	1.70	Chgo.
2⅛	12.06	1.70	20
2 3/16	12.78	1.70	20
2¼	13.52	1.70	20
2 5/16	14.28	1.70	Chgo.
2⅜	15.06	1.70	Chgo.
2 7/16	15.87	1.70	20
2½	16.69	1.70	20
2 9/16	17.53	1.85	Chgo.
2⅝	18.40	1.85	Chgo.
2 11/16	19.29	1.85	20
2¾	20.19	1.85	Chgo.
2 13/16	21.12	1.85	20
2⅞	22.07	1.85	20
2 15/16	23.04	1.35	20
3	24.03	1.35	20
3 1/16	25.05	1.45	Chgo.
3⅛	26.08	1.45	Chgo.
3 3/16	27.13	1.45	Chgo.
3¼	28.21	1.45	20
3 5/16	29.30	1.45	Chgo.
3⅜	30.42	1.45	Chgo.
3 7/16	31.55	1.55	20
3½	32.71	1.55	20
3 9/16	33.89	1.55	Chgo.
3 11/16	36.31	1.55	Chgo.
3¾	37.55	1.55	Chgo.
3 15/16	41.40	1.70	Chgo.
4	42.73	1.70	20
4 1/16	44.07	1.70	Chgo.
4⅛	45.44	1.70	Chgo.
4 3/16	46.83	1.80	Chgo.
4¼	48.23	1.80	Chgo.
4 7/16	52.58	1.80	Chgo.
4½	54.08	1.90	Chgo.
4 9/16	55.59	1.90	Chgo.
4¾	60.25	1.90	Chgo.
4 15/16	65.10	2.00	Chgo.
5	66.76	2.00	Chgo.
5¼	73.60	2.00	Chgo.
5 7/16	78.95	2.50	Chgo.
5½	80.78	2.50	Chgo.
5 15/16	94.14	2.95	Chgo.
6	96.13	2.95	Chgo.
7	130.85	5.30	Chgo.
8	170.90	5.80	Chgo.

For cutting and boxing extras, see pages 220 and 221.

For Color Code see page 193.
For AISI and SAE SPECIFICATIONS see pages 194 to 205.
For AVERAGE PHYSICAL PROPERTIES see pages 206 to 215.

COLD FINISHED ROUNDS

AISI C 1040—C 1042—C 1045 SAE 1040-1045

These Open Hearth Steels are all-purpose shafting steels for semi-heavy duty shafting applications and for cut-from-the-bar parts requiring greater strength and durability than the lower carbon steels. Desired physical properties may be developed by simple heat treatments, although large quantities are used without heat treating. Recommended for shafts, axles, etc., where stiffness and high strength are required.

Size, Inches	Weight per Foot, Pounds	Extra for Size	Lengths in Stock, Feet
3/16	.094	1.10	Chgo.
1/4	.167	1.00	Chgo.
5/16	.261	.90	Chgo.
3/8	.376	.85	Chgo.
7/16	.511	.85	Chgo.
1/2	.668	.80	Chgo.
9/16	.845	.80	Chgo.
5/8	1.04	.70	Chgo.
11/16	1.26	.60	Chgo.
3/4	1.50	.60	16
13/16	1.76	.55	Chgo.
7/8	2.04	.55	16
15/16	2.35	.55	Chgo.
1	2.67	.55	16
1 1/16	3.01	.55	16
1 1/8	3.38	.55	16
1 3/16	3.77	.55	16
1 1/4	4.17	.55	16, 20
1 5/16	4.60	.55	16
1 3/8	5.05	.55	20
1 7/16	5.52	.55	20
1 1/2	6.01	.60	16, 20
1 9/16	6.52	.60	Chgo.
1 5/8	7.05	.60	16
1 11/16	7.60	.60	16
1 3/4	8.18	.60	20
1 13/16	8.77	.60	16
1 7/8	9.39	.60	20
1 15/16	10.02	.60	20
2	10.68	.60	20
2 1/8	12.06	.65	Chgo.
2 3/16	12.78	.65	20
2 1/4	13.52	.65	20
2 5/16	14.28	.65	Chgo.
2 3/8	15.06	.65	20
2 7/16	15.87	.65	Chgo.
2 1/2	16.69	.65	20
2 5/8	18.40	.80	20
2 11/16	19.29	.80	Chgo.
2 3/4	20.19	.80	20
2 13/16	21.12	.80	Chgo.
2 7/8	22.07	.80	Chgo.
2 15/16	23.04	.80	20
3	24.03	.80	20
3 1/16	25.05	.90	20
3 1/8	26.08	.90	20
3 3/16	27.13	.90	20
3 1/4	28.21	.90	20
3 5/16	29.30	.90	20
3 3/8	30.42	.90	20
3 7/16	31.55	1.00	16, 20
3 1/2	32.71	1.00	16, 20
3 9/16	33.89	1.00	Chgo.
3 5/8	35.09	1.00	20
3 11/16	36.31	1.00	16, 20
3 3/4	37.55	1.00	20
3 7/8	40.10	1.15	20
3 15/16	41.40	1.15	16, 20
4	42.73	1.15	16, 20
4 1/8	45.44	1.15	20
4 3/16	46.83	1.25	20
4 1/4	48.23	1.25	20
4 5/16	49.66	1.25	Chgo.
4 3/8	51.11	1.25	20
4 7/16	52.58	1.25	16, 20
4 1/2	54.08	1.35	20
4 5/8	57.12	1.35	20
4 11/16	58.68	1.35	20
4 3/4	60.25	1.35	20
4 7/8	63.46	1.35	Chgo.
4 15/16	65.10	1.45	16, 20
5	66.76	1.45	20
5 3/16	71.86	1.45	Chgo.
5 1/4	73.60	1.45	20
5 3/8	77.15	1.45	Chgo.
5 7/16	78.95	1.95	20
5 1/2	80.78	1.95	20
5 3/4	88.29	1.95	20
5 15/16	94.14	2.40	20
6	96.13	2.40	20
6 1/4	104.31	2.40	20
6 1/2	112.82	Spec.	20
6 3/4	121.67	Spec.	Chgo.
7	130.85	Spec.	20
7 1/2	150.21	Spec.	Chgo.
8	170.90	Spec.	Chgo.

A quality extra of **10c** per 100 lbs. applies.
For cutting and boxing extras, see pages 220 and 221.
For Color Code see page 193.

COLD FINISHED ROUNDS

STRESSPROOF

IN OUR CHICAGO STOCK

STRESSPROOF is a furnace treated bar possessing high strength, free machinability, minimum warpage and excellent wearability right-in-the-bar.

Broaching, drilling, reaming, splining and threading may be performed with excellent tool life, smooth finish and minimum distortion.

Although as strong as many heat treated steels, STRESSPROOF requires no heat treating or carburizing and is recommended for maintenance and repair as well as production, having all the qualities necessary for an ideal all-around shafting and machinery steel.

Tolerances— 1″ Round and smaller—plus .000 to minus .006″
Over 1″ Round to 2″—plus .000 to minus .008″
Over 2″ Round to 3″—plus .000 to minus .010″

Strength: Minimum yield point—100,000 psi in sizes from ⅜″ to 2″.
Strength: Minimum yield point—90,000 psi in sizes over 2″ to 3″ Inc.
Machinability: 76% of Bessemer B-1112.
Ladle Analysis— Carbon .40—.50 Phosphorus .045 Max.
Manganese 1.35—1.65 Sulphur .20—.33

12 Ft. Lengths

Size, Inches	Weight per Foot, Pounds	Extra for Size	Size, Inches	Weight per Foot, Pounds	Extra for Size	Size, Inches	Weight per Foot, Pounds	Extra for Size
½	.668	.80	1 3/16	3.77	.55	1⅞	9.39	.60
9/16	.845	.80	1¼	4.17	.55	1 15/16	10.02	.60
⅝	1.04	.70	1 5/16	4.60	.55	2	10.68	.60
11/16	1.26	.60	1⅜	5.05	.55	2 3/16	12.78	.65
¾	1.50	.60	1 7/16	5.52	.55	2¼	13.52	.65
13/16	1.76	.55	1½	6.01	.60	2⅜	15.06	.65
⅞	2.04	.55	1 9/16	6.52	.60	2 7/16	15.87	.65
15/16	2.35	.55	1⅝	7.05	.60	2½	16.69	.65
1	2.67	.55	1 11/16	7.60	.60	2 13/16	21.12	.80
1 1/16	3.01	.55	1¾	8.18	.60	2 15/16	23.04	.80
1⅛	3.38	.55	1 13/16	8.77	.60	3	24.03	.80

For cutting and boxing extras ,see pages 220 and 221.
For Color Code see page 193.

FOR COLD FINISHED ALLOY STEELS

See Pages 99 to 101

ALLOY BARS
HIGH STRENGT
STEEL
AILS
ILER TU
AINLESS
EEL
EETS
PLATES
ANGLES
ROUNDS
SQUARES
HEXAGONS
FLATS
STRIP
TUBING
PIPE
ELECTRODES
TOOLS
SUPPLIES &
MACHINERY
DATA

COLD FINISHED SCREW STOCK BESSEMER ROUNDS

AISI B1112 SAE 1112

This is standard Bessemer Screw Stock. It is free machinning and is recommended for screw machine parts requiring considerable machining where undue physical properties are not desired. It will machine satisfactorily at a speed of approximately 165 surface feet per minute. If faster machinability is required, B-1113 or SAE 1113 should be specified.

Size In.	Wt. Per Ft., Pounds	Extra for Size	Lengths in Stock, Feet	Size In.	Wt. Per Ft., Pounds	Extra for Size	Lengths in Stock, Feet
1/16	.010	3.00	12	57/64	2.12	.55	Chgo.
5/64	.016	3.00	12	29/32	2.19	.55	12
3/32	.023	3.00	12	15/16	2.35	.55	12
7/64	.032	2.50	12	31/32	2.51	.55	12
1/8	.042	1.30	12	1	2.67	.55	12, 16, 20
9/64	.053	1.30	12	1 1/64	2.76	.55	Chgo.
5/32	.065	1.30	12	1 1/32	2.84	.55	12
11/64	.079	1.30	12	1 1/16	3.01	.55	12, 16, 20
3/16	.094	1.10	12	1 3/32	3.20	.55	Chgo.
13/64	.110	1.10	12	1 1/8	3.38	.55	12, 16, 20
7/32	.128	1.10	12	1 3/16	3.77	.55	12, 16, 20
15/64	.147	1.10	12	1 7/32	3.97	.55	New'k
1/4	.167	1.00	12, 16	1 1/4	4.17	.55	12, 16, 20
17/64	.189	1.00	12	1 5/16	4.60	.55	12, 16, 20
9/32	.211	1.00	12	1 3/8	5.05	.55	12, 16, 20
19/64	.235	1.00	12	1 7/16	5.52	.55	12, 14, 16, 20
5/16	.261	.90	12	1 1/2	6.01	.60	12, 16, 20
21/64	.288	.90	12	1 9/16	6.52	.60	12, 16, 20
11/32	.316	.90	12	1 5/8	7.05	.60	12, 16, 20
23/64	.345	.90	12	1 11/16	7.60	.60	12, 16, 20
3/8	.376	.85	12, 16	1 3/4	8.18	.60	12, 16, 20
25/64	.405	.85	12	1 13/16	8.77	.60	12
13/32	.441	.85	12	1 7/8	9.39	.60	16
27/64	.476	.85	12	1 15/16	10.02	.60	12, 16, 20
7/16	.511	.85	12, 16	2	10.68	.60	12, 16, 20
29/64	.549	.85	12	2 1/16	11.36	.65	12
15/32	.587	.85	12	2 1/8	12.06	.65	12
31/64	.627	.85	12	2 3/16	12.78	.65	12
1/2	.668	.80	12, 14, 16, 20	2 1/4	13.52	.65	12
33/64	.710	.80	12	2 5/16	14.28	.65	12
17/32	.754	.80	12	2 3/8	15.06	.65	12
9/16	.845	.80	12, 16	2 7/16	15.87	.65	12
37/64	.893	.80	12	2 1/2	16.69	.65	12
19/32	.942	.80	12	2 9/16	17.53	.80	12, 16
39/64	.992	.80	12	2 5/8	18.40	.80	12
5/8	1.04	.70	12, 16, 20	2 11/16	19.29	.80	12
41/64	1.10	.70	12	2 3/4	20.19	.80	12
21/32	1.15	.70	12	2 13/16	21.13	.80	Chgo.
11/16	1.26	.60	12, 16	2 7/8	22.07	.80	12
23/32	1.38	.60	12	2 15/16	23.04	.80	12
47/64	1.44	.60	12	3	24.03	.80	12
3/4	1.50	.60	12, 16, 20	3 1/8	26.08	.90	New'k
49/64	1.57	.60	Chgo.	3 1/4	28.21	.90	12
25/32	1.63	.60	12	3 3/8	30.42	.90	New'k
51/64	1.70	.60	12	3 1/2	32.71	1.00	12
13/16	1.76	.55	12, 16	3 5/8	35.09	1.00	New'k
27/32	1.90	.55	12	3 3/4	37.55	1.00	New'k
7/8	2.04	.55	12, 16, 20	4	42.73	1.15	New'k

A quality extra of 10c per 100 lbs. applies.
For cutting and boxing extras, see pages 220 and 221.

COLD FINISHED ROUNDS GROUND AND POLISHED ACCURACY STOCK

AISI B1112 SAE 1112

A precision screw stock, centerless ground, and highly polished; tolerance, plus or minus .0005″. Recommended for parts requiring close tolerance and special finish.

Size Ins.	Wt. Per Ft., Pounds	Size, Accuracy and Finish Extras	Lengths in Stock, Feet	Size, Ins.	Wt. Per Ft., Pounds	Size, Accuracy and Finish Extras	Lengths in Stock, Feet
1/8	.042	20.45	12	3/4	1.502	4.00	12
5/32	.065	17.45	Chgo.	13/16	1.763	3.85	Chgo.
3/16	.094	11.25	12	7/8	2.045	3.85	12
7/32	.128	11.25	Chgo.				
1/4	.167	8.15	12	15/16	2.347	3.85	16
9/32	.211	8.15	Chgo.	1	2.670	3.85	12
5/16	.261	6.55	12	1 1/16	3.015	4.25	12
11/32	.316	6.55	Chgo.	1 1/8	3.380	4.15	Chgo.
3/8	.376	5.00	12	1 3/16	3.77	4.10	Chgo.
13/32	.441	5.00	Chgo.	1 1/4	4.17	4.10	Chgo.
7/16	.511	4.25	Chgo.	1 5/16	4.60	4.10	Chgo.
1/2	.668	4.20	12	1 3/8	5.05	4.10	Chgo.
9/16	.845	4.35	Chgo.	1 7/16	5.52	4.10	Chgo.
5/8	1.043	4.25	12	1 1/2	6.01	4.15	Chgo.
11/16	1.262	4.00	Chgo.				

A quality extra of **10c** per 100 lbs. applies.
For cutting and boxing extras, see pages 220 and 221.

COLD FINISHED SCREW STOCK

OPEN HEARTH ROUNDS AISI C 1120
IN OUR PITTSBURGH STOCK

Size, Inches	Weight per Foot, Pounds	Extra for Size	Lengths In Stock, Feet	Size, Inches	Weight per Foot, Pounds	Extra for Size	Lengths In Stock, Feet
3/16	.094	1.10	12	2	10.68	.60	12
1/4	.167	1.00	12	2 1/16	11.36	.65	12
5/16	.261	.90	12	2 1/8	12.06	.65	12
3/8	.376	.85	12	2 3/16	12.78	.65	12
7/16	.511	.85	12	2 1/4	13.52	.65	12
15/32	.587	.85	12	2 5/16	14.28	.65	20
1/2	.668	.80	12	2 3/8	15.06	.65	16
5/8	1.04	.70	12	2 7/16	15.87	.65	12
11/16	1.26	.60	12	2 1/2	16.69	.65	12
3/4	1.50	.60	16	2 9/16	17.53	.80	12
25/32	1.63	.60	12	2 5/8	18.40	.80	12
13/16	1.76	.55	12	2 11/16	19.29	.80	12
7/8	2.04	.55	12	2 3/4	20.19	.80	16
15/16	2.35	.55	12	2 13/16	21.13	.80	12
1	2.67	.55	12	2 7/8	22.07	.80	16
1 1/16	3.01	.55	16	2 15/16	23.04	.80	20
1 1/8	3.38	.55	12	3	24.03	.80	16
1 3/16	3.77	.55	12	3 1/8	26.08	.90	12
1 1/4	4.17	.55	12	3 1/4	28.21	.90	12
1 5/16	4.60	.55	12	3 3/8	30.42	.90	12
1 3/8	5.05	.55	12	3 1/2	32.71	1.00	12
1 7/16	5.52	.55	12	3 5/8	35.09	1.00	12
1 1/2	6.01	.60	12	3 11/16	36.31	1.00	12
1 9/16	6.52	.60	16	3 3/4	37.55	1.00	16
1 5/8	7.05	.60	12	3 7/8	40.10	1.15	12
1 11/16	7.60	.60	16	4	42.73	1.15	16
1 3/4	8.18	.60	12	4 1/4	48.23	1.25	12
1 13/16	8.77	.60	12	4 1/2	54.08	1.35	16
1 7/8	9.39	.60	12	5	66.82	1.45	16
1 15/16	10.02	.60	16				

A quality extra of **10c** per 100 lbs. applies.

ALLOY BARS
HIGH STRENGTH STEEL
RAILS — BOILER TUB
TAINLESS TEEL
HEETS
PLATES — ANGLES — ROUNDS
SQUARES — HEXAGONS
FLATS — STRIP
TUBING — PIPE — ELECTRODES
TOOLS SUPPLIES & MACHINERY — DATA

COLD FINISHED HIGH SPEED SCREW STOCK

BESSEMER ROUNDS

AISI B 1113 SAE 1113

IN OUR CHICAGO STOCK

This is a high sulphur Bessemer Screw Stock intended for high speed screw machine production where close adherence to machined dimension and bright finish are required. The fastest cutting of various Cold Finished Bessemer Screw Steels, it will machine satisfactorily at a speed of approximately 225 surface feet per minute, or 35% faster than B-1112 or SAE 1112.

12 FT. LENGTHS

Size, Inches	Weight per Foot, Pounds	Extra for Size
5/64	.016	3.00
3/32	.023	3.00
7/64	.032	2.50
1/8	.042	1.30
9/64	.053	1.30
5/32	.065	1.30
11/64	.079	1.30
3/16	.094	1.10
13/64	.110	1.10
7/32	.128	1.10
15/64	.147	1.10
1/4	.167	1.00
17/64	.189	1.00
9/32	.211	1.00
19/64	.235	1.00
5/16	.261	.90
21/64	.288	.90
11/32	.316	.90
23/64	.345	.90
3/8	.376	.85
25/64	.405	.85
13/32	.441	.85
27/64	.476	.85
7/16	.511	.85
29/64	.549	.85
15/32	.587	.85
31/64	.627	.85
1/2	.668	.80
33/64	.710	.80
17/32	.754	.80
9/16	.845	.80
37/64	.893	.80
19/32	.942	.80
39/64	.992	.80
5/8	1.04	.70
41/64	1.10	.70
21/32	1.15	.70
11/16	1.26	.60
23/32	1.38	.60
47/64	1.44	.60
3/4	1.50	.60
49/64	1.57	.60
25/32	1.63	.60
51/64	1.70	.60
13/16	1.76	.55
27/32	1.90	.55
7/8	2.04	.55
29/32	2.19	.55
15/16	2.35	.55
31/32	2.51	.55
1	2.67	.55
1 1/64	2.76	.55
1 1/32	2.84	.55
1 1/16	3.01	.55
1 3/32	3.20	.55
1 1/8	3.38	.55
1 3/16	3.77	.55
1 7/32	3.97	.55
1 1/4	4.17	.55
1 5/16	4.60	.55
1 3/8	5.05	.55
1 7/16	5.52	.55
1 1/2	6.01	.60
1 9/16	6.52	.60
1 5/8	7.05	.60
1 11/16	7.60	.60
1 3/4	8.18	.60
1 13/16	8.77	.60
1 7/8	9.39	.60
1 15/16	10.02	.60
2	10.68	.60
2 1/16	11.36	.65
2 1/8	12.06	.65
2 3/16	12.78	.65
2 1/4	13.52	.65
2 5/16	14.28	.65
2 3/8	15.06	.65
2 7/16	15.87	.65
2 1/2	16.69	.65
2 9/16	17.53	.80
2 5/8	18.40	.80
2 11/16	19.29	.80
2 3/4	20.19	.80
2 13/16	21.13	.80
2 7/8	22.07	.80
2 15/16	23.04	.80
3	24.03	.80

A quality extra of 17½c per 100 lbs. applies.
For cutting and boxing extras, see pages 220 and 221.

COLD FINISHED ROUNDS HIGH MANGANESE

AISI C1117 - SAE 1117

An Open Hearth, low carbon, High Manganese case hardening steel, superior in machinability, uniformity and core strength. It is widely used for automatic or hand screw machine parts requiring considerable machining. Carburizing or liquid hardening yields good case and core properties where service conditions do not warrant the full strength of an alloy steel. Will machine satisfactorily at a speed of approximately 140 surface feet per minute.

12 FT. LENGTHS

Size, Inches	Weight per Foot, Pounds	Extra for Size	Size, Inches	Weight per Foot, Pounds	Extra for Size	Size, Inches	Weight per Foot, Pounds	Extra for Size
3/16	.094	1.10	1 1/2	6.01	.60	*2 15/16	23.04	.80
1/4	.167	1.00	1 9/16	6.52	.60	3	24.03	.80
* 9/32	.211	1.00	1 5/8	7.05	.60	*3 1/16	25.04	.90
5/16	.261	.90	1 11/16	7.60	.60	3 1/8	26.08	.90
* 11/32	.316	.90	1 3/4	8.18	.60	*3 3/16	27.13	.90
3/8	.376	.85	1 13/16	8.77	.60	3 1/4	28.21	.90
7/16	.511	.85	1 7/8	9.39	.60	*3 3/8	30.42	.90
1/2	.668	.80	1 15/16	10.02	.60	*3 7/16	31.55	1.00
9/16	.845	.80	2	10.68	.60	3 1/2	32.71	1.00
5/8	1.04	.70	*2 1/16	11.36	.65	3 5/8	35.09	1.00
11/16	1.26	.60	2 1/8	12.06	.65	3 3/4	37.55	1.00
3/4	1.50	.60	2 3/16	12.78	.65	*3 7/8	40.10	1.15
13/16	1.76	.55	2 1/4	13.52	.65	*3 15/16	41.40	1.15
7/8	2.04	.55	2 5/16	14.28	.65	4	42.73	1.15
15/16	2.35	.55	2 3/8	15.06	.65	4 1/8	45.44	1.15
1	2.67	.55	2 7/16	15.87	.65	4 1/4	48.23	1.25
1 1/16	3.01	.55	2 1/2	16.69	.65	4 1/2	54.08	1.35
1 1/8	3.38	.55	*2 9/16	17.53	.80	4 3/4	60.25	1.35
1 3/16	3.77	.55	2 5/8	18.40	.80	5	66.76	1.45
1 1/4	4.17	.55	2 11/16	19.29	.80	*5 1/4	73.60	1.45
1 5/16	4.60	.55	2 3/4	20.19	.80	*5 1/2	80.78	1.95
1 3/8	5.05	.55	*2 13/16	21.12	.80	*5 3/4	88.30	1.95
1 7/16	5.52	.55	2 7/8	22.07	.80	6	96.13	2.40

A quality extra of **20c** per 100 lbs. applies.

***IN OUR CHICAGO STOCK**

COLD FINISHED ROUNDS MEDIUM CARBON HIGH MANGANESE

AISI C1137 - SAE 1137

IN OUR CHICAGO STOCK

An Open Hearth, medium carbon, High Manganese Steel of good machining quality which responds nicely to heat treatment. While often used in the Cold Finished condition for automatic or hand screw machine parts that require greater strength and resistance to wear than that offered by lower carbon steel, the largest use for this steel is for machined parts that are to be subjected to a simple heat treatment for the development of desired physical properties. Will machine satisfactorily at a speed of approximately 125 surface feet per minute.

12 FT. LENGTHS

Size, Inches	Weight per Foot, Pounds	Extra for Size	Size, Inches	Weight per Foot, Pounds	Extra for Size	Size, Inches	Weight per Foot, Pounds	Extra for Size
1/4	.167	1.00	1	2.67	.55	1 3/4	8.18	.60
5/16	.261	.90	1 1/16	3.01	.55	1 7/8	9.39	.60
3/8	.376	.85	1 1/8	3.38	.55	1 15/16	10.02	.60
7/16	.511	.85	1 3/16	3.77	.55	2	10.68	.60
1/2	.668	.80	1 1/4	4.17	.55	2 1/8	12.06	.65
9/16	.845	.80	1 5/16	4.60	.55	2 1/4	13.52	.65
5/8	1.04	.70	1 3/8	5.05	.55	2 3/8	15.06	.65
11/16	1.26	.60	1 7/16	5.52	.55	2 7/16	15.87	.65
3/4	1.50	.60	1 1/2	6.01	.60	2 1/2	16.69	.65
13/16	1.76	.55	1 9/16	6.52	.60	2 5/8	18.40	.80
7/8	2.04	.55	1 5/8	7.05	.60	2 15/16	23.04	.80
15/16	2.35	.55	1 11/16	7.60	.60	3	24.03	.80

A quality extra of **35c** per 100 lbs. applies.
For cutting and boxing extras, see pages 220 and 221.

COLD FINISHED SQUARES

AISI C1019

Size, Inches	Wt. Per Ft.	Extra for Size	Lengths in Stock, Feet	Size, Inches	Wt. Per Ft.	Extra for Size	Lengths in Stock, Feet
1/8	.053	5.00	12	1 9/16	8.30	1.25	12
5/32	.083	5.00	Chgo.	1 5/8	8.98	1.25	12
3/16	.120	4.00	12	1 11/16	9.68	1.25	12
7/32	.163	4.00	Chgo.	1 3/4	10.41	1.25	12
1/4	.213	2.50	12	1 7/8	11.95	1.25	12
9/32	.269	2.50	Chgo.	1 15/16	12.76	1.25	Chgo.
5/16	.332	2.50	12	2	13.60	1.25	12, 16
3/8	.478	1.75	12	2 1/8	15.35	2.00	12
7/16	.651	1.75	12	2 3/16	16.27	2.00	12
1/2	.850	1.30	12	2 1/4	17.21	2.00	12, 16
9/16	1.08	1.30	12	2 5/16	18.18	2.00	16
5/8	1.33	1.30	12	2 3/8	19.18	2.00	12
11/16	1.61	1.05	12	2 7/16	20.20	2.00	12
3/4	1.91	1.05	12	2 1/2	21.25	2.00	12
13/16	2.24	1.05	12	2 9/16	22.33	2.00	Chgo.
7/8	2.60	1.05	12	2 5/8	23.43	2.00	12
15/16	2.99	1.05	12	2 3/4	25.71	2.00	12, 16
1	3.40	1.05	12	2 7/8	28.10	2.00	Chgo.
1 1/16	3.84	1.05	12	3	30.60	2.00	12, 16
1 1/8	4.30	1.05	12	3 1/8	33.20	2.00	Chgo.
1 3/16	4.80	1.05	12	3 1/4	35.91	2.00	Chgo.
1 1/4	5.31	1.05	12, 16	3 3/8	38.73	2.00	Chgo.
1 5/16	5.86	1.05	12	3 1/2	41.65	2.00	16
1 3/8	6.43	1.25	12	3 3/4	47.81	2.00	12
1 7/16	7.03	1.25	12	4	54.40	2.00	12
1 1/2	7.65	1.25	12, 16	4 1/2	68.85	4.00	12

COLD FINISHED SQUARES

AISI B1112—SAE 1112

IN OUR CHICAGO STOCK

Size, Inches	Wt. Per Ft.	Extra for Size	Lengths in Stock, Feet	Size, Inches	Wt. Per Ft.	Extra for Size	Lengths in Stock, Feet
1/8	.053	5.00	Chgo.	5/8	1.33	1.30	12
5/32	.083	5.00	Chgo.	11/16	1.61	1.05	12
3/16	.120	4.00	12	3/4	1.91	1.05	12
7/32	.163	4.00	Chgo.	13/16	2.24	1.05	12
1/4	.213	2.50	12	7/8	2.60	1.05	12
9/32	.269	2.50	Chgo.	15/16	2.99	1.05	12
5/16	.332	2.50	12	1	3.40	1.05	12
3/8	.478	1.75	12	1 1/16	3.84	1.05	12
7/16	.651	1.75	12	1 1/8	4.30	1.05	12
1/2	.850	1.30	12	1 3/16	4.80	1.05	12
9/16	1.08	1.30	12	1 1/4	5.31	1.05	Milw.

A quality extra of 10c per 100 lbs. applies on B1112.
For cutting and boxing extras, see pages 220 and 221.

For AISI and SAE SPECIFICATIONS see pages 194 to 205.
For AVERAGE PHYSICAL PROPERTIES see pages 206 to 215.

COLD FINISHED SQUARES

AISI C1040 — SAE 1040

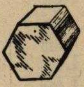
IN OUR CHICAGO STOCK

Size, Inches	Weight per Foot, Pounds	Extra for Size	Lengths in Stock, Feet	Size, Inches	Weight per Foot, Pounds	Extra for Size	Lengths in Stock, Feet
½	.850	1.30	12	1¼	5.31	1.05	12
⅝	1.33	1.30	12	1⅜	6.43	1.25	12
¾	1.91	1.05	12	1½	7.65	1.25	12
⅞	2.60	1.05	12	1¾	10.41	1.25	12
1	3.40	1.05	12	2	13.60	1.25	12
1⅛	4.30	1.05	12				

A quality extra of **10c** per 100 lbs. applies.

COLD FINISHED HEXAGONS

AISI B1112 — SAE 1112



Size, Inches	Weight per Foot, Pounds	Extra for Size	Lengths in Stock, Feet	Size, Inches	Weight per Foot, Pounds	Extra for Size	Lengths in Stock, Feet
⅛	.05	5.00	12	15/16	2.59	.55	12
5/32	.07	5.00	New'k.	1	2.94	.50	12
3/16	.10	4.00	12	1 1/16	3.32	.50	12
7/32	.14	4.00	Pgh.	1 ⅛	3.73	.45	12
¼	.18	2.50	12	1 3/16	4.15	.45	12
9/32	.23	2.50	New'k.	1 ¼	4.60	.45	12
5/16	.29	2.50	12	1 5/16	5.07	.50	12
11/32	.35	2.50	New'k.	1 ⅜	5.57	.50	12
⅜	.41	1.75	12	1 7/16	6.09	.50	12
13/32	.49	1.75	Chgo.	1 ½	6.63	.60	12
7/16	.56	1.25	12	1 9/16	7.19	.60	12
½	.74	.90	12	1 ⅝	7.78	.60	12
9/16	.93	.80	12	1 11/16	8.39	.60	12
19/32	1.04	.80	Chgo.	1 ¾	9.02	.60	12
⅝	1.15	.70	12	1 13/16	9.67	.60	12
11/16	1.39	.60	12	1 ⅞	10.35	.60	12
¾	1.66	.60	12	1 15/16	11.05	.75	Chgo.
13/16	1.94	.60	12	2	11.78	.75	12
⅞	2.25	.55	12				

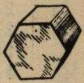
A quality extra of **10c** per 100 lbs. applies.

COLD FINISHED HEXAGONS

AISI B1113 — SAE 1113

12 FT. LENGTHS

IN OUR CHICAGO STOCK



Size, Inches	Weight per Foot, Pounds	Extra for Size	Size, Inches	Weight per Foot, Pounds	Extra for Size	Size, Inches	Weight per Foot, Pounds	Extra for Size
¼	.18	2.50	¾	1.66	.60	1 5/16	5.07	.50
5/16	.29	2.50	13/16	1.94	.60	1 ⅜	5.57	.50
⅜	.41	1.75	⅞	2.25	.55	1 7/16	6.09	.50
7/16	.56	1.25	15/16	2.59	.55	1 ½	6.63	.60
½	.74	.90	1	2.94	.50	1 ⅝	7.78	.60
9/16	.93	.80	1 1/16	3.32	.50	1 ¾	9.02	.60
⅝	1.15	.70	1 ⅛	3.73	.45	1 ⅞	10.35	.60
11/16	1.39	.60	1 ¼	4.60	.45	2	11.78	.75

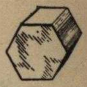
A quality extra of **17½c** per 100 lbs. applies.
For cutting and boxing extras see pages 220 and 221.

For Color Code see page 193.

ALLOY BARS
HIGH STRENGT STEEL
RAILS — BOILER TU
TAINLESS TEEL
HEETS
PLATES — ANGLES — ROUNDS
SQUARES — HEXAGONS
FLATS — STRIP
TUBING — PIPE — ELECTRODES
TOOLS SUPPLIES & MACHINERY — DATA

COLD FINISHED HEXAGONS

AISI C1117 — SAE 1117



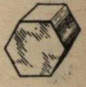
Size, Inches	Weight per Foot, Pounds	Extra for Size	Lengths in stock, Feet	Size, Inches	Weight per Foot, Pounds	Extra for Size	Lengths, in stock Feet
1/4	.18	2.50	Chgo.	1 5/8	7.78	.60	12
3/8	.41	1.75	Chgo.	1 11/16	8.39	.60	12
7/16	.56	1.25	Chgo.	1 3/4	9.02	.60	12
1/2	.74	.90	Chgo.	1 13/16	9.67	.60	12
9/16	.93	.80	Chgo.	1 7/8	10.35	.60	12
5/8	1.15	.70	Chgo.	2	11.78	.75	12
11/16	1.39	.60	Chgo.	2 1/8	13.30	.75	12
3/4	1.66	.60	Chgo.	2 3/16	14.09	.75	Chgo.
7/8	2.25	.55	Chgo.	2 1/4	14.91	1.00	12
15/16	2.59	.55	Chgo.	2 3/8	16.61	1.00	12
1	2.94	.50	Chgo.	2 1/2	18.40	1.00	12
1 1/16	3.32	.50	Chgo.	2 5/8	20.29	1.00	Chgo.
1 1/8	3.73	.45	Chgo.	2 3/4	22.27	1.00	12
1 3/16	4.15	.45	Chgo.	2 7/8	24.33	1.50	Chgo.
1 1/4	4.60	.45	12	3	26.50	1.50	12
1 5/16	5.07	.50	12	3 1/8	28.75	3.00	Chgo.
1 3/8	5.57	.50	12	3 1/2	36.07	3.00	12
1 7/16	6.09	.50	12	3 3/4	41.41	4.00	Chgo.
1 1/2	6.63	.60	12	4	47.11	4.00	12

A quality extra of **20c** per 100 lbs. applies.

COLD FINISHED HEXAGONS

AISI C1137 — SAE 1137

IN OUR CHICAGO STOCK



Size, Inches	Weight per Foot, Pounds	Extra for Size	Lengths in Stock, Feet	Size, Inches	Weight per Foot, Pounds	Extra for Size	Lengths in Stock, Feet
3/8	.41	1.75	12	1 1/8	3.73	.45	12
7/16	.56	1.25	12	1 3/16	4.15	.45	12
1/2	.74	.90	12	1 1/4	4.60	.45	12
9/16	.93	.80	12	1 3/8	5.57	.50	12
5/8	1.15	.70	12	1 7/16	6.09	.50	12
11/16	1.39	.60	12	1 1/2	6.63	.60	12
3/4	1.66	.60	12	1 5/8	7.78	.60	12
13/16	1.94	.60	12	1 3/4	9.02	.60	12
7/8	2.25	.55	12	1 7/8	10.35	.60	12
15/16	2.59	.55	12	2	11.78	.75	12
1	2.94	.50	12	2 1/4	14.91	1.00	12
1 1/16	3.32	.50	12				

A quality extra of **35c** per 100 lbs. applies.

For cutting and boxing extras see pages 220 and 221.

For AISI and SAE SPECIFICATIONS see pages 194 and 205.

For AVERAGE PHYSICAL PROPERTIES see pages 206 to 215.

FOR

COLD FINISHED ALLOY STEELS

SEE Pages 99 to 101

Milwau

2545 U
St. Pau

1394 E
Clevel

Room 2
Toledo

1281 Re
Pittsbu

1401 Li
Buffalo

P. O.
Baltim

P. O.
Newar

1617 P
Philad

P. O.
Allsto

COLD FINISHED FLATS

AISI C1019

Smooth Finish, Close to Size and True to Shape

Size, Inches	Weight per Foot, Pounds	Extra for Size	Lengths in stock, Feet
1/8x 3/16	.080	10.50	12
1/4	.106	8.50	12
5/16	.133	6.50	12
3/8	.159	6.50	12
7/16	.186	6.50	Chgo.
1/2	.213	6.50	12
9/16	.239	5.50	Chgo.
5/8	.266	5.50	12
11/16	.293	5.50	Chgo.
3/4	.319	4.50	12
7/8	.372	4.50	12
1	.425	4.50	12
1 1/8	.478	3.50	12
1 1/4	.531	3.50	12
1 3/8	.584	3.50	Chgo.
1 1/2	.638	3.50	12
1 3/4	.744	3.00	12
1 7/8	.797	3.00	Chgo.
2	.850	3.00	12
2 1/4	.956	3.00	12
2 1/2	1.062	3.00	12
2 3/4	1.169	3.00	12
3	1.275	3.00	12
3 1/2	1.488	3.50	12
4	1.700	3.50	12
4 1/2	1.913	3.50	12
5	2.125	3.50	12
6	2.550	3.50	12
5/32x 1/4	.133	8.50	Chgo.
5/16	.166	6.50	Chgo.
3/8	.199	6.50	Chgo.
3/16x 1/4	.159	7.75	12
5/16	.199	5.75	12
3/8	.239	5.75	12
7/16	.279	5.75	Chgo.
1/2	.319	5.75	12
9/16	.359	5.25	Chgo.
5/8	.398	5.25	12
3/4	.478	3.75	12
7/8	.558	3.75	12
1	.638	3.75	12
1 1/8	.717	2.75	12
1 1/4	.797	2.75	12
1 3/8	.877	2.75	Chgo.
1 1/2	.956	2.75	12
1 3/4	1.116	1.75	12
1 7/8	1.195	1.75	Chgo.
2	1.275	1.75	12
2 1/4	1.434	1.75	12
2 1/2	1.594	1.75	12
2 3/4	1.753	1.75	12
3	1.912	1.75	12
3 1/4	2.072	3.00	Chgo.
3 1/2	2.232	3.00	12
3 3/4	2.391	3.00	Chgo.
4	2.550	3.00	12
4 1/2	2.868	3.00	Chgo.
5	3.188	3.00	12
6	3.825	3.00	12

Size, Inches	Weight per Foot, Pounds	Extra for Size	Lengths in stock, Feet
7/32x 5/16	.232	5.75	Pgh.
3/8	.279	5.75	Pgh.
1/2	.372	5.75	New'k.
1/4x 5/16	.266	5.75	12
3/8	.319	5.75	12
7/16	.372	5.75	12
1/2	.425	5.75	12
9/16	.478	5.25	Chgo.
5/8	.531	5.25	12
11/16	.584	5.25	Chgo.
3/4	.638	3.75	12
7/8	.744	3.75	12
1	.850	3.75	12
1 1/8	.956	2.75	12
1 1/4	1.063	2.75	12
1 3/8	1.169	2.75	12
1 1/2	1.275	2.75	12
1 5/8	1.381	1.75	12
1 3/4	1.488	1.75	12
1 7/8	1.594	1.75	Chgo.
2	1.700	1.75	12
2 1/4	1.913	1.75	12
2 1/2	2.125	1.75	12
2 5/8	2.231	1.75	Chgo.
2 3/4	2.338	1.75	12
3	2.550	1.75	12, 14
3 1/4	2.763	3.00	12
3 1/2	2.975	3.00	12
4	3.400	3.00	12
4 1/2	3.825	3.00	12
5	4.250	3.00	12
6	5.100	3.00	12
8	6.800	*Special	10–12
10	8.500	*Special	10–12
12	10.200	*Special	10–12
5/16x 3/8	.398	5.75	12
7/16	.465	5.75	12
1/2	.531	5.75	12
9/16	.598	5.25	Chgo.
5/8	.664	5.25	12
3/4	.797	3.75	12
7/8	.930	3.75	12
1	1.063	3.75	12
1 1/8	1.195	2.75	12
1 1/4	1.328	2.75	12
1 3/8	1.461	2.75	Chgo.
1 1/2	1.594	2.75	12
1 3/4	1.859	1.75	12
2	2.125	1.75	12
2 1/8	2.258	1.75	Chgo.
2 1/4	2.391	1.75	12
2 1/2	2.656	1.75	12
2 3/4	2.922	1.75	12
3	3.188	1.75	12
3 1/2	3.719	3.00	12
4	4.250	3.00	12
4 1/2	4.781	3.00	Chgo.
5	5.313	3.00	12
6	6.375	3.00	12
12	12.750	*Special	Chgo.

(Continued on following page)

ALLOY BARS
HIGH STRENGT
STEEL
RAILS
BOILER TU
TAINLESS
TEEL
HEETS
PLATES
—
ANGLES
—
ROUNDS
SQUARES
—
HEXAGONS
FLATS
—
STRIP
TUBING
—
PIPE
—
ELECTRODES
TOOLS
SUPPLIES &
MACHINERY
—
DATA

COLD FINISHED FLATS

(Continued

Size, Inches	Weight, per Foot, Pounds	Extra for Size	Lengths in stock, Feet
3/8x 7/16	.558	4.75	12
1/2	.638	4.75	12
9/16	.717	4.25	Chgo.
5/8	.797	4.25	12
11/16	.877	4.25	Chgo.
3/4	.956	2.75	12
7/8	1.116	2.75	12
1	1.275	2.75	12
1 1/8	1.434	2.75	12
1 1/4	1.594	2.75	12
1 3/8	1.753	2.75	12
1 1/2	1.913	2.75	12
1 5/8	2.072	1.75	12
1 3/4	2.231	1.75	12
1 7/8	2.391	1.75	12
2	2.550	1.75	12
2 1/8	2.709	1.75	Chgo.
2 1/4	2.869	1.75	12
2 1/2	3.188	1.75	12
2 3/4	3.506	1.75	12
3	3.825	1.75	12
3 1/4	4.144	2.50	Chgo.
3 1/2	4.463	2.50	12
3 3/4	4.781	2.50	Chgo.
4	5.100	2.50	12
4 1/2	5.738	2.50	12
5	6.375	2.50	12
5 1/2	7.013	2.50	Chgo.
6	7.650	2.50	12
8	10.200	*Special	10–12
10	12.750	*Special	10–12
12	15.300	*Special	10–12
7/16x 1/2	.744	4.75	12
9/16	.837	4.25	Chgo.
5/8	.930	4.25	12
3/4	1.116	2.75	12
7/8	1.302	2.75	12
1	1.488	2.75	12
1 1/8	1.673	2.75	Chgo.
1 1/4	1.859	2.75	12
1 1/2	2.231	2.75	12
1 3/4	2.603	1.75	12
2	2.975	1.75	12
2 1/4	3.347	1.75	12
2 1/2	3.719	1.75	12
2 3/4	4.091	1.75	12
3	4.463	1.75	12
3 1/2	5.206	2.50	12
4	5.950	2.50	12
4 1/2	6.694	2.50	12
5	7.438	2.50	12
6	8.925	2.50	12
1/2x 9/16	.956	3.25	12
5/8	1.063	3.25	12
11/16	1.169	3.25	Chgo.
3/4	1.275	1.75	12
13/16	1.382	1.75	Chgo.
7/8	1.488	1.75	12
1	1.700	1.75	12
1 1/8	1.913	1.75	12
1 1/4	2.125	1.75	12
1 3/8	2.338	1.75	12
1 1/2	2.550	1.75	12
1 5/8	2.763	1.50	Chgo.
1/2x1 3/4	2.975	1.50	12
2	3.400	1.50	12
2 1/4	3.825	1.50	12
2 1/2	4.250	1.50	12
2 3/4	4.675	1.50	12
3	5.100	1.50	12
3 1/4	5.525	2.50	Chgo.
3 1/2	5.950	2.50	12
4	6.800	2.50	12
4 1/2	7.650	2.50	12
5	8.500	2.50	12
5 1/2	9.350	2.50	Chgo.
6	10.200	2.50	12
8	13.600	*Special	10–12
10	17.000	*Special	10–12
12	20.400	*Special	10–12
9/16x 5/8	1.195	3.25	Chgo.
3/4	1.434	1.75	Chgo.
7/8	1.673	1.75	Chgo.
1	1.913	1.75	Chgo.
1 1/8	2.152	1.75	Chgo.
1 1/4	2.391	1.75	Chgo.
1 1/2	2.869	1.75	Chgo.
1 3/4	3.347	1.50	Chgo.
2	3.825	1.50	Chgo.
5/8x 11/16	1.461	2.75	Chgo.
3/4	1.594	1.50	12
13/16	1.727	1.50	Chgo.
7/8	1.859	1.50	12
15/16	1.960	1.50	Chgo.
1	2.125	1.50	12
1 1/8	2.391	1.50	12
1 3/16	2.523	1.50	Chgo.
1 1/4	2.656	1.50	12
1 3/8	2.922	1.50	12
1 7/16	3.060	1.50	Chgo.
1 1/2	3.188	1.50	12
1 5/8	3.453	1.50	Chgo.
1 3/4	3.719	1.50	12
1 7/8	3.984	1.50	Chgo.
2	4.250	1.50	12
2 1/4	4.781	1.50	12
2 1/2	5.313	1.50	12
2 3/4	5.844	1.50	12
3	6.375	1.50	12
3 1/4	6.906	2.50	Chgo.
3 1/2	7.438	2.50	12
3 3/4	7.969	2.50	Pgh.
4	8.500	2.50	12
4 1/4	9.031	2.50	Chgo.
4 1/2	9.563	2.50	12
5	10.625	2.50	12
5 1/2	11.688	2.50	Chgo.
6	12.750	2.50	12
8	17.000	*Special	10–12
10	21.250	*Special	10–12
12	25.500	*Special	10–12
11/16x 3/4	1.753	1.50	Chgo.
13/16	1.899	1.50	Chgo.
7/8	2.045	1.50	Chgo.
1	2.338	1.50	Chgo.
1 1/8	2.630	1.50	Chgo.
1 1/4	2.922	1.50	Chgo.
1 1/2	3.506	1.50	Chgo.

(Continued on following page)

COLD FINISHED FLATS

(Continued)

Size, Inches	Weight per Foot, Pounds	Extra for Size	Lengths in stock, Feet
¹¹⁄₁₆x1¾	4.091	1.50	Chgo.
2	4.675	1.50	Chgo.
¾x ⅞	2.231	1.50	12
1	2.550	1.50	12
1⅛	2.869	1.50	12
1¼	3.188	1.50	12
1⅜	3.506	1.50	12
1½	3.825	1.50	12
1⅝	4.144	1.50	12
1¾	4.463	1.50	12
1⅞	4.781	1.50	Chgo.
2	5.100	1.50	12
2¼	5.738	1.50	12
2⅜	6.056	1.50	New'k.
2½	6.375	1.50	12
2¾	7.013	1.50	12
3	7.650	1.50	12
3¼	8.288	2.50	Chgo.
3½	8.925	2.50	12
4	10.200	2.50	12
4¼	10.838	2.50	Chgo.
4½	11.475	2.50	12
5	12.750	2.50	12
5½	14.025	2.50	12
6	15.300	2.50	12
8	20.400	*Special	10–12
10	25.500	*Special	10–12
12	30.600	*Special	10–12
⅞ x1	2.975	1.50	12
1⅛	3.347	1.50	12
1¼	3.719	1.50	12
1⅜	4.091	1.50	Chgo.
1½	4.463	1.50	12
1¾	5.206	1.50	12
2	5.950	1.50	12
2¼	6.694	1.50	12
2½	7.438	1.50	12
2¾	8.181	1.50	12
3	8.925	1.50	12
3¼	9.669	2.50	Chgo.
3½	10.413	2.50	12
4	11.900	2.50	12
4½	13.388	2.50	12
5	14.875	2.50	12
6	17.850	2.50	12
1 x1⅛	3.825	1.50	12
1¼	4.250	1.50	12
1⅜	4.675	1.50	12
1½	5.100	1.50	12
1⅝	5.525	1.50	Chgo.
1¾	5.950	1.50	12
1⅞	6.375	1.50	Chgo.
2	6.800	1.50	12
2¼	7.650	1.50	12
2½	8.500	1.50	12
2¾	9.350	1.50	12
3	10.200	1.50	12
3½	11.900	2.50	12
4	13.600	2.50	12
4½	15.300	2.50	12
5	17.000	2.50	12
1 x5½	18.700	2.50	Chgo.
6	20.400	2.50	12
8	27.200	*Special	10–12
10	34.000	*Special	10–12
12	40.800	*Special	10–12
1⅛x1¼	4.781	1.50	12
1⅜	5.259	1.50	Chgo.
1½	5.738	1.50	12
1⅝	6.216	1.50	Chgo.
1¾	6.694	1.50	12
2	7.650	1.50	12
2¼	8.606	1.50	12
2½	9.563	1.50	12
3	11.475	1.50	12
4	15.300	2.50	12
1¼x1⅜	5.844	1.50	12
1½	6.375	1.50	12
1⅝	6.906	1.50	Chgo.
1¾	7.438	1.50	12
1⅞	7.969	1.50	Chgo.
2	8.500	1.50	12
2¼	9.563	1.50	12
2½	10.625	1.50	12
2¾	11.688	1.50	12
3	12.750	1.50	12
3¼	13.813	2.50	Chgo.
3½	14.875	2.50	12
4	17.000	2.50	12
4½	19.125	2.50	12
5	21.250	2.50	12
5½	23.375	2.50	Chgo.
6	25.500	2.50	12
8	34.000	*Special	Chgo.
10	42.500	*Special	Chgo.
12	51.000	*Special	Chgo.
1⅜x2	9.350	1.50	Chgo.
2¼	10.519	1.50	Chgo.
2½	11.688	1.50	Chgo.
2¾	12.856	1.50	Chgo.
3	14.025	1.50	Chgo.
1½x1⅝	8.288	1.50	Chgo.
1¾	8.925	1.50	12
1⅞	9.563	1.50	Chgo.
2	10.200	1.50	12
2¼	11.475	1.50	12
2½	12.750	1.50	12
2¾	14.025	1.50	Chgo.
3	15.300	1.50	12
3¼	16.575	2.50	Chgo.
3½	17.850	2.50	12
4	20.400	2.50	12
4½	22.950	2.50	12
5	25.500	2.50	12
5½	28.050	2.50	Chgo.
6	30.600	2.50	12
8	40.800	*Special	10–12
10	51.000	*Special	10–12
12	61.200	*Special	10–12
1⅝x2	11.050	1.50	Chgo.
3	16.575	1.50	Chgo.
1¾x2	11.900	1.50	12

(Concluded on following page)

ALLOY BARS
HIGH STRENGT
STEEL
RAILS
—
BOILER TU
TAINLESS
TEEL
HEETS
PLATES
—
ANGLES
—
ROUNDS
SQUARES
—
HEXAGONS
FLATS
—
STRIP
TUBING
—
PIPE
—
ELECTRODES
TOOLS
SUPPLIES &
MACHINERY
—
DATA

COLD FINISHED FLATS

(Concluded

Size, Inches	Weight per Foot, Pounds	Extra for Size	Lengths in stock, Feet	Size, Inches,	Weight per Foot, Pounds	Extra for Size	Lengths in stock, Feet
1¾x2¼	13.388	1.50	12	2x 12	81.600	*Special	10–12
2½	14.875	1.50	12	2¼x2½	19.125	1.50	Chgo.
2¾	16.363	1.50	Chgo.	2¾	21.030	1.50	Chgo.
3	17.850	1.50	12	3	22.950	1.50	Chgo.
3¼	19.330	2.50	Chgo.	3¼	24.863	2.50	Chgo.
3½	20.825	2.50	12	3½	26.775	2.50	Chgo.
4	23.800	2.50	12	4	30.600	2.50	Chgo.
4½	26.775	2.50	Chgo.	4½	34.425	2.50	Chgo.
5	29.750	2.50	12	5	38.250	2.50	Chgo.
6	35.700	2.50	12	6	45.900	2.50	Chgo.
2 x2¼	15.300	1.50	12	2½x3	25.500	1.50	12
2½	17.000	1.50	12	3¼	27.620	2.50	Chgo.
2¾	18.700	1.50	12	3½	29.750	2.50	12
3	20.400	1.50	12	4	34.000	2.50	12
3½	23.800	2.50	12	4½	38.250	2.50	Chgo.
4	27.200	2.50	12	5	42.500	2.50	12
4½	30.600	2.50	12	6	51.000	2.50	12
5	34.000	2.50	12	3 x4	40.800	2.50	12
6	40.800	2.50	12	5	51.000	2.50	Chgo.
8	54.400	*Special	10–12	6	61.200	2.50	Chgo.
10	68.000	*Special	10–12				

*Flats over 6″ wide—Special Base

For cutting and boxing extras, see pages 220 and 221.

For AISI and SAE SPECIFICATIONS see pages 194 to 205.

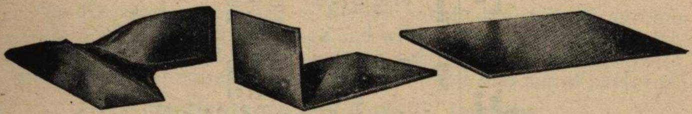
For AVERAGE PHYSICAL PROPERTIES see pages 206 to 215.

For your convenience we have included in this issue tables that give the weights of bar sections in standard lengths.

Refer to Pages 236 to 241 Inclusive.

AMERICAN QUALITY COLD ROLLED STRIP STEEL

IN OUR TWIN CITY (ST. PAUL) STOCK



DEAD SOFT No. 5 TEMPER No. 2 REGULAR BRIGHT FINISH. For difficult bending, forming and drawing. Suitable for nickel and other plating.

HALF HARD No. 2 TEMPER No. 2 REGULAR BRIGHT FINISH. For simple bending and forming where stiffness of material is required. Suitable for nickel or other plating.

HARD No. 1 TEMPER No. 2 BRIGHT FINISH. Primarily intended for flat work and punching. Suitable for nickel and other plating.

			Dead Soft Temper, 8 Foot Lengths	Half Hard Temper, 6 Foot Lengths	Hard Temper, 6 Foot Lengths
Thickness	B. W. Gage or Fraction	Weight per Square Foot	Max. Width, Inches	Max. Width. Inches	Max. Width, Inches
.014	No. 28	.571	23 15/16	23 15/16	23 15/16
.015	....	.612	....	23 15/16	23 15/16
.016	1/64	.653	23 15/16	23 15/16	23 15/16
.018	No. 26	.734	23 15/16	23 15/16	23 15/16
.020	No. 25	.816	23 15/16	23 15/16	23 15/16
.022	No. 24	.898	23 15/16	23 15/16	23 15/16
.025	No. 23	1.020	23 15/16	23 15/16	23 15/16
.028	No. 22	1.142	23 15/16	23 15/16	23 15/16
.032	1/32	1.306	23 15/16	23 15/16	23 15/16
.035	No. 20	1.428	23 15/16	23 15/16	23 15/16
.042	No. 19	1.713	23 15/16	23 15/16	23 15/16
.050	No. 18	1.999	23 15/16	23 15/16	23 15/16
.058	No. 17	2.366	23 15/16	23 15/16	23 15/16
.0625	1/16	2.500	23 15/16	23 15/16	23 15/16
.065	No. 16	2.651	23 15/16	23 15/16	23 15/16
.072	No. 15	2.938	23 15/16	23 15/16	23 15/16
.078	5/64	3.125	23 15/16	23 15/16	23 15/16
.083	No. 14	3.386	23 15/16	23 15/16	23 15/16
.095	3/32	3.876	23 15/16	23 15/16	23 15/16
.109	7/64	4.375	23 15/16	23 15/16	23 15/16
.120	No. 11	4.896	23 15/16	23 15/16	23 15/16
.125	1/8	5.000	23 15/16	23 15/16	23 15/16
.134	No. 10	5.467	23 15/16	23 15/16	23 15/16
.140	9/64	5.625	23 15/16	23 15/16	23 15/16
.148	No. 9	6.038	23 15/16	23 15/16	23 15/16
.156	5/32	6.250	23 15/16	23 15/16	23 15/16
.165	No. 8	6.732	23 15/16	23 15/16	23 15/16
.187	3/16	7.500	18	18	18
.203	13/64	8.282	18	18	18
.219	7/32	8.750	18	18	18
.250	1/4	10.000	20	20	20

Extras for gage and width see page 88.

Sheared to any width desired.

COLD ROLLED STRIP

EXTRAS FOR GAGE AND WIDTH

Decimal Thickness	Under ½" to 3⁄16" Inclusive		Under 1" to ½" Inclusive		Under 1½" to 1" Inclusive		Under 3" to 1½" Inclusive		3" to 6" Inclusive		Over 6" to 9" Inclusive		Over 9" to 12" Inclusive		Over 12" to 16" Inclusive		Over 16" to 23 15⁄16" Inclusive	
	Hard	Soft	Hard	Soft	Hard	Soft	Hard	Soft	Hard	Soft	Hard	Soft	Hard	Soft	Hard	Soft	Hard	Soft
.250 to .161	3.50	3.95	1.85	2.30	1.20	1.65	.85	1.30	.50	.95	.25	.70	.25	.70	.25	.70	.25	.70
.160 to .100	3.35	3.80	1.70	2.15	1.10	1.55	.85	1.30	.50	.95	.35	.80	.35	.80	.35	.80	.35	.80
.099 to .069	3.45	3.90	2.05	2.50	1.25	1.70	1.05	1.50	.85	1.30	.65	1.10	.65	1.10	.65	1.10	.65	1.10
.068 to .050	3.55	4.00	2.15	2.60	1.35	1.80	1.10	1.55	.95	1.40	.75	1.20	.75	1.20	.75	1.20	.75	1.20
.049 to .040	3.70	4.25	2.30	2.85	1.50	2.05	1.25	1.80	1.10	1.65	.90	1.45	.90	1.45	.90	1.45	.90	1.45
.039 to .035	3.70	4.25	2.30	2.85	1.50	2.05	1.25	1.80	1.10	1.65	1.05	1.60	1.05	1.60	1.05	1.60	1.05	1.60
.034 to .032	5.10	5.80	3.10	3.80	2.25	2.95	1.80	2.50	1.55	2.25	1.45	2.15	1.45	2.15	1.45	2.15	1.45	2.15
.031 to .029	5.55	6.25	3.80	4.50	2.80	3.50	2.35	3.05	2.00	2.70	1.75	2.45	1.85	2.55	1.90	2.60	1.90	2.60
.028 to .026	5.90	6.60	3.90	4.60	2.90	3.60	2.45	3.15	2.10	2.80	1.85	2.55	2.05	2.75	......	......	......	......
.025 to .023	6.60	7.30	4.60	5.30	3.45	4.15	3.00	3.70	2.55	3.25	2.45	3.15	2.70	3.40	......	......	......	......
.022 to .020	7.25	7.95	4.75	5.45	3.60	4.30	3.15	3.85	2.70	3.40	2.70	3.40	3.05	3.75	......	......	......	......
.019 to .017	9.60	9.60	7.20	7.20	6.25	6.25	5.80	5.80	4.90	4.90	5.15	5.15	5.40	5.40	......	......	......	......
.016 to .015	11.15	11.15	7.75	7.75	6.80	6.80	6.35	6.35	5.45	5.45	5.70	5.70	......	......	......	......	......	......
.014 to .013	12.80	12.80	9.65	9.65	8.65	8.65	8.30	8.30	7.30	7.30	7.70	7.70	......	......	......	......	......	......

COLD ROLLED FLAT WIRE

Half Hard No. 2 Temper, No. 4 Round Edge

No. 2 Regular Bright Finish, Rockwell B65-75

The fine surface permits a highly polished nickel or chrome finish. Is held closely to gage and widths and the rounded edge is finely finished. It is particularly adapted for manufacture of accessories and fixtures of all kinds, also wood and metal patterns.

Straightened and Cut—12′ Lengths

IN OUR CHICAGO STOCK

Thickness	Gage or Fract. Equiv.	Width, Inches	Est. Wt. Per Lin. Foot
.028	No. 22	½	.048
.032	1/32	¼	.027
		5/16	.034
		⅜	.040
		½	.053
		⅝	.066
		¾	.080
		⅞	.093
		1	.106
		1¼	.132
		1½	.160
.035	No. 20	3/16	.022
		¼	.030
		5/16	.037
		⅜	.044
		7/16	.052
		½	.059
		⅝	.074
		¾	.090
		⅞	.104
		1	.119
		1¼	.149
		1½	.179
.042	No. 19	½	.071
		¾	.107
		⅞	.125
		1	.143
		1¼	.179
		1¾	.250
		2	.286
.050	No. 18	3/16	.032
		¼	.042
		5/16	.053
		⅜	.064
		7/16	.074
		½	.085
		9/16	.095
		⅝	.106
		¾	.127
		⅞	.149
		1	.170
		1⅛	.179
		1¼	.200
		1½	.240
		1¾	.297
		2	.340
.058	No. 17	¼	.049
		5/16	.061
		7/16	.086
		½	.098
		¾	.148
		⅞	.172
.058	No. 17	1	.197
.0625	1/16	3/16	.040
		¼	.053
		5/16	.067
		⅜	.080
		7/16	.093
		½	.106
		9/16	.119
		⅝	.133
		¾	.159
		⅞	.186
		1	.213
		1¼	.265
		1½	.318
		1¾	.371
		2	.425
.072	No. 15	½	.122
		⅝	.153
		1	.244
.078	5/64	⅝	.166
.080	No. 14	⅜	.102
		½	.136
		⅝	.170
		¾	.204
		⅞	.238
		1	.272
.083	No. 14	¼	.071
		5/16	.088
		⅜	.106
		7/16	.123
		½	.141
		⅝	.176
		¾	.211
		⅞	.256
		1	.282
		1½	.423
.095	3/32	¼	.081
		5/16	.101
		⅜	.121
		7/16	.141
		½	.161
		⅝	.201
		¾	.242
		⅞	.282
		1	.323
		1⅛	.363
		1¼	.404
		1½	.484
.109	No. 12	⅜	.139
		½	.185
		⅝	.232

(Concluded on following page)

COLD ROLLED FLAT WIRE

(Concluded)

Straightened and Cut—12′ Lengths

IN OUR CHICAGO STOCK

Thickness	Gage or Fract. Equiv.	Width, Inches	Est. Wt. Per Lin. Foot
.109	No. 12	¾	.279
		1	.371
.125	⅛	¼	.106
		5/16	.133
		⅜	.159
		7/16	.186
		½	.212
		⅝	.266
		¾	.319
		⅞	.372
		1	.425
		1⅛	.479
		1¼	.531
		1½	.637
		2	.850
		2½	1.063
.156	5/32	5/16	.166
		⅜	.199
		½	.265
		⅝	.332
		¾	.398
		⅞	.464
		1	.530
.187	3/16	¼	.159
		5/16	.199
		⅜	.239
		7/16	.279
		½	.319
		⅝	.398
		¾	.474
		⅞	.558
		1	.637
		1¼	.797
		1½	.956

SOFT ANNEALED WIRE

IN COILS

IN OUR CHICAGO STOCK

W & M Gage	Extra for Size	Wt. Per 100 Ft., Lbs.
5/16	.20	26.10
¼	.10	16.69
3	.10	15.84
4	.10	13.54
5	.10	11.43
6	Base	9.83
7	Base	8.36
8	Base	7.00
9	Base	5.87
10	.05	4.86
11	.10	3.87
12	.15	2.97
13	.25	2.23
14	.35	1.71
15	.55	1.38
16	.75	1.04
17	1.00	.78
18	1.50	.60
19	2.00	.45
20	2.25	.33

FOR

WELDING ELECTRODES

See pages 123 and 124

SOFT GALVANIZED WIRE

IN COILS

IN OUR CHICAGO STOCK

W & M Gage	Extra for Size	Wt. Per 100 Ft., Lbs.	W & M Gage	Extra for Size	Wt. Per 100 Ft., Lbs.	W & M Gage	Extra for Size	Wt. Per 100 Ft., Lbs.
¼	.35	16.67	8	Base	7.00	13	.35	2.23
3	.35	15.84	9	Base	5.87	14	.55	1.71
4	.35	13.54	10	.05	4.86	15	.85	1.38
5	.35	11.43	11	.10	3.87	16	1.10	1.04
6	Base	9.83	12	.20	2.97	17	1.45	.78
3⁄16	Base	9.38	3⁄32	.35	2.35	18	2.25	.60
7	Base	8.36						

BRIGHT BASIC WIRE

IN COILS

IN OUR CHICAGO STOCK

W & M Gage	Extra or Size	Wt. Per 100 Ft., Lbs.	W & M Gage	Extra for Size	Wt. Per 100 Ft., Lbs.	W & M Gage	Extra for Size	Wt. Per 100 Ft., Lbs.
½	.20	66.80	4	.10	13.54	⅛	.10	4.17
7⁄16	.20	51.10	7⁄32	.40	12.78	11	.10	3.87
⅜	.20	37.60	5	.10	11.43	12	.15	2.97
11⁄32	.20	31.55	6	Base	9.83	3⁄32	.25	2.35
5⁄16	.20	26.10	3⁄16	Base	9.38	13	.25	2.23
0	.20	25.06	7	Base	8.36	14	.35	1.71
1	20	21.36	8	Base	7.00	15	.55	1.38
9⁄32	.20	21.12	5⁄32	Base	6.52	16	.75	1.00
2	.20	18.38	9	Base	5.87	17	1.00	.78
¼	.10	16.69	10	.05	4.86	18	1.50	.60
3	.10	15.84						

COPPERED BESSEMER ROD

4 and 12 Ft. Lengths

IN OUR CHICAGO STOCK

W & M Gage	Weight Per 100 Ft., Lbs.	W & M Gage	Weight Per 100 Ft., Lbs.	W & M Gage	Weight Per 100 Ft., Lbs.
⅝	104.31	4	13.54	10	4.86
½	66.80	7⁄32	12.80	⅛	4.21
7⁄16	51.10	5	11.43	11	3.87
13⁄32	44.57	6	9.83	7⁄64	3.19
⅜	37.60	3⁄16	9.38	12	2.97
11⁄32	31.55	7	8.36	3⁄32	2.35
5⁄16	26.10	11⁄64	7.88	13	2.23
19⁄64	23.54	8	7.00	14	1.71
1	21.36	5⁄32	6.53	15	1.38
9⁄32	21.20	9	5.87	16	1.04
¼	16.69	9⁄64	5.28		

CARILLOY ALLOY STEELS

SELECTING ALLOY STEELS

Carilloy alloy steels provide exceptional physical properties such as high tensile strength and ductility not available in carbon steels. Proper selection depends upon the ultimate use for which the steel is intended. If a hard wearing surface is the prime requisite, a carburizing steel should be selected; if high strength is what is wanted, a heat treating, or heat-treated-in-the-bar steel should be selected.

QUALITY

Carilloy alloy steels stocked by this warehouse are the product of a pioneer producer of alloy steels. Years of research, unexcelled production facilities, and a trained personnel insure a uniform product at all times.

TEST REPORTS

Our bars are properly identified at the mill with the number of the heat from which they were made. Test reports covering the chemical analysis can be supplied for bars in the as rolled or annealed condition and test reports covering both the chemical analysis and physical properties can be supplied for bars carried in stock already heat treated. When material is received at the warehouse each grade is carefully segregated by heat numbers so that test reports can always be furnished, if needed. Each bar is identified with a hea number and a color marking designating the type of alloy steel. Small sizes are bundled and the heat number is indicated on a tag attached to the bundle.

INDUSTRIAL APPLICATIONS OF U.S.S. CARILLOY STEELS

The following tabulation shows how various grades of alloy steels are utilized in industry. The listings under the various applications shown are not in any case to be taken as representing the only grades for a particular purpose, but rather the grades most commonly used. Questions of design, economics, machining facilities, availability of heat treating equipment and other factors enter into the selection of the particular steel. Therefore, the following suggestions should be used only as a guide in the selection of the proper grade of steel.

AISI - A 3115 - 3120 - 8617 - 8620

Ring gears and pinions
Pins
Transmission gears
Spline shafts
Knuckle pins
Tool chucks
Piston pins
Counter shafts
Oil well drilling
Cutters and reamers
Carburized tools and fixtures
Chain links and pins
Machine tool gears
Thrust collars
Ball sockets
Carburized bearings

AISI - A 3135 - 3140 - 4140 - 8742

Knuckle pins
Bolts
Nuts
Crankshafts
Spline shafts
Propeller blades
Studs
Connecting rods
Automobile axle shafts
Drive shafts
Knuckle shafts
Transmission spline shafts
Universal joints
Counter shafts
Tools
Bucket teeth
Forge hammers and rams
Hammers
Chisels
Pliers
Screw drivers
Wrenches
Machinery
Bolts
Collets
Collet seats
Diesel crankshafts
Piston rods
Refrigerator
Spindles
Studs
Armature shafts
Lead screws
Winch shafts
High temperature bolts
Hydraulic rams

CARILLOY HOT ROLLED ROUNDS

AISI A 3115 - AISI A 3120 As Rolled

A standard low cost Nickel-Chrome Carburizing Steel which finds its best application in parts necessitating better than average core toughness and case strength. The increased hardenability due to its alloy content permits satisfactory hardening by oil quenching after carburizing. This feature is advantageous especially in alleviating hardening problems. The steel is readily machinable in the as-rolled condition, having approximately one half the machinability of Bessemer screw stock. It has excellent forging qualities and will cold shear satisfactorily up to approximately 4″ round.

FINE GRAIN—MACHINE STRAIGHTENED

16 TO 20 FT. RANDOM LENGTHS

IN OUR CHICAGO STOCK

Size, Inches	Weight per Foot, Pounds	Extra for Size	Size, Inches	Weight per Foot, Pounds	Extra for Size
½	0.668	.20	3	24.03	.20
⅝	1.04	.10	3⅛	26.08	.25
¹¹⁄₁₆	1.26	.10	3¼	28.21	.25
¾	1.50	Base	3½	32.71	.25
⅞	2.04	Base	3⅝	35.09	.25
1	2.67	Base	3¾	37.55	.25
1¹⁄₁₆	3.01	Base	4	42.73	.25
1⅛	3.38	Base	4¼	48.23	.25
1¼	4.17	Base	4½	54.08	.25
1⁵⁄₁₆	4.60	Base	4¾	60.25	.35
1⅜	5.05	Base	5	66.76	.35
1½	6.01	Base	5¼	73.60	.45
1⅝	7.05	.10	5½	80.78	.45
1¾	8.18	.10	5¾	88.29	.55
1⅞	9.39	.10	6	96.13	.55
2	10.68	.10	6¼	104.31	.65
2⅛	12.06	.15	6½	112.82	.65
2¼	13.52	.15	6¾	121.67	.75
2⅜	15.06	.15	7	130.85	.75
2½	16.69	.15	7¼	140.36	.75
2⅝	18.40	.20	7½	150.21	.75
2¾	20.19	.20	7¾	160.39	.85
2⅞	22.07	.20	8	170.90	1.10

For cutting extras see page 221.

For

COLD FINISHED ALLOY STEELS

See Pages 99 to 101

CARILLOY HOT ROLLED ROUNDS

AISI A 3135 As Rolled
AISI A 3140 As Rolled

This Chrome-Nickel Steel of unusual toughness and wear resistance has been the standard heat treating steel for many years and is used widely for parts requiring the high strength and service life of an alloy steel. The as-rolled material is suitable for forging and shaping and should be followed by subsequent heat treatment to obtain the full physical properties of its alloy content.

Fine Grain — Machine Straightened

RANDOM LENGTHS 16 TO 20 FEET
IN OUR CHICAGO STOCK

Size, Inches	Weight Per Foot, Pounds	Extra for Size	Size, Inches	Weight Per Foot, Pounds	Extra for Size
½	.668	.20	3⅛	26.08	.25
⅝	1.04	.10	3¼	28.21	.25
¾	1.50	Base	3½	32.71	.25
⅞	2.04	Base	3⅝	35.09	.25
1	2.67	Base	3¾	37.55	.25
1¹⁄₁₆	3.01	Base	4	42.73	.25
1⅛	3.38	Base	4¼	48.23	.25
1¼	4.17	Base	4½	54.08	.25
1⁵⁄₁₆	4.60	Base	4¾	60.25	.35
1⅜	5.05	Base	5	66.76	.35
1½	6.01	Base	5¼	73.60	.45
1⅝	7.05	.10	5½	80.78	.45
1¾	8.18	.10	5¾	88.29	.55
1⅞	9.39	.10	6	96.13	.55
2	10.68	.10	6¼	104.30	.65
2⅛	12.06	.15	6½	112.82	.65
2¼	13.52	.15	6¾	121.67	.75
2⅜	15.06	.15	7	130.85	.75
2½	16.69	.15	7¼	140.36	.75
2⅝	18.40	.20	7½	150.21	.75
2¾	20.19	.20	7¾	160.39	.85
2⅞	22.07	.20	8	170.90	1.10
3	24.03	.20			

We can arrange to have this material annealed or heat treated (quenched and drawn) promptly when desired.

Specify Brinell hardness desired and permissible range when ordering heat treated material.

CARILLOY HOT ROLLED ROUNDS

- AISI A4140 AS ROLLED

A Chrome Molybdenum steel of high hardenability, having good strength and wear resistance. The as-rolled material is suitable for forging and shaping and should be followed by subsequent heat treatment to obtain the full physical properties of its alloy content.

Fine Grain — Machine Straightened

RANDOM LENGTHS 16 to 20 FEET

IN OUR CHICAGO STOCK

Size, Inches	Weight per Foot, Pounds	Extra for Size	Size, Inches	Weight per Foot, Pounds	Extra for Size,
½	0.668	.20	2⅞	22.07	.20
⅝	1.04	.10	3	24.03	.20
¾	1.50	Base	3⅛	26.08	.25
⅞	2.04	Base	3¼	28.21	.25
1	2.67	Base	3½	32.71	.25
1⅛	3.38	Base	3¾	37.55	.25
1¼	4.17	Bese	4	42.73	.25
1$\frac{5}{16}$	4.60	Base	4¼	48.23	.25
1⅜	5.05	Base	4½	54.08	.25
1½	6.01	Base	4¾	60.25	.35
1⅝	7.05	.10	5	66.76	.35
1¾	8.18	.10	5¼	73.60	.45
1⅞	9.39	.10	5½	80.78	.45
2	10.68	.10	5¾	88.29	.55
2⅛	12.06	.15	6	96.13	.55
2¼	13.52	.15	6¼	104.31	.65
2⅜	15.06	.15	6½	112.82	.65
2½	16.69	.15	7	130.85	.75
2⅝	18.40	.20	7½	150.21	.75
2¾	20.19	.20	8	170.90	1.10

Arrangements can be made to supply the above material heat treated to customer's individual physical requirements.

For

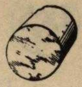
CHEMICAL ANALYSES

See Pages 194 to 205

PHYSICAL PROPERTIES

See Pages 206 to 215

CARILLOY HOT ROLLED ROUNDS



AISI A4100 SERIES

HEAT TREATED

This Chrome Molybdenum steel having the basic qualities of the AISI A4140 As Rolled material, is heat treated in the bar and ready to use as received. This eliminates all troubles of hardening in the user's plant, either before or after machining. It has in many instances been instrumental in reducing costs and it is widely used by machine shops, maintenance men and in production. The material has been quenched and drawn to conform to ASTM specification A-96-44, Class C, for high temperature studs and bolts.

Fine Grain — Machine Straightened

IN OUR CHICAGO STOCK

RANDOM LENGTHS 16 TO 18 FEET

Size, Inches	Weight Per Foot, Pounds	Extra For Size	Size, Inches	Weight Per Foot, Pounds	Extra For Size
½	.668	.20	2⅝	18.40	.20
⅝	1.04	.10	2¾	20.19	.20
¾	1.50	Base	2⅞	22.07	.20
⅞	2.04	Base	3	24.03	.20
1	2.67	Base	3⅛	26.08	.25
1⅛	3.38	Base	3¼	28.21	.25
1¼	4.17	Base	3½	32.71	.25
1⁵⁄₁₆	4.60	Base	3¾	37.55	.25
1⅜	5.05	Base	4	42.73	.25
1½	6.01	Base	4¼	48.23	.25
1⅝	7.05	.10	4½	54.08	.25
1¾	8.18	.10	4¾	60.25	.35
1⅞	9.39	.10	5	66.76	.35
2	10.68	.10	5¼	73.60	.45
2⅛	12.06	.15	5½	80.78	.45
2¼	13.52	.15	5¾	88.29	.55
2⅜	15.06	.15	6	96.13	.55
2½	16.69	.15			

Physicals shown below are the minimums that can be expected in line with the hardness of this material which is the highest that can be commercially machined. No further heat treatment is necessary after machining.

Typical Minimum Physical Properties

Size	Tensile Strength Lbs. Per Sq. In.	Yield Point Lbs. Per Sq. In.	Elong. in 2 in.	Red. of Area	Max. Surface Brinell Hardness
2½″ and under	125,000	105,000	16%	50%	321
Over 2½″ to 4″ incl.	115,000	95,000	16%	45%	321
Over 4″ to 6″ incl.	110,000	85,000	16%	45%	321

HIGH STRENGT STEEL
RAILS
BOILER TU
TAINLESS TEEL HEETS
PLATES — ANGLES — ROUNDS
SQUARES — HEXAGONS
FLATS — STRIP
TUBING — PIPE — ELECTRODES
TOOLS SUPPLIES & MACHINERY — DATA

CARILLOY HOT ROLLED ROUNDS

AISI A 8617-8620 AS ROLLED

These Nickel Chromium Molybdenum Steels give excellent case and core characteristics when properly carburized and oil hardened. They are readily machinable in the unannealed condition.

Fine Grain—Machine Straightened

RANDOM LENGTHS 16 to 20 FEET

Size, Inches	Weight per Foot, Pounds	Extra for Size
½	0.668	.20
⅝	1.04	.10
¾	1.50	Base
⅞	2.04	Base
1	2.67	Base
1⅛	3.38	Base
1¼	4.17	Base
*1⁵⁄₁₆	4.60	Base
1⅜	5.05	Base
1½	6.01	Base
1⅝	7.05	.10
1¾	8.18	.10
1⅞	9.39	.10
2	10.68	.10
2⅛	12.06	.15
2¼	13.52	.15
2⅜	15.06	.15
2½	16.69	.15
2⅝	18.40	.20
2¾	20.19	.20
*2⅞	22.07	.20
3	24.03	.20
*3⅛	26.08	.25
3¼	28.21	.25
3½	32.71	.25
3¾	37.55	.25
4	42.73	.25
4¼	48.23	.25
4½	54.08	.25
4¾	60.25	.35
5	66.76	.35
5¼	73.60	.45
5½	80.78	.45
*5¾	88.29	.55
6	96.13	.55
*6¼	104.31	.65
6½	112.82	.65
7	130.85	.75
*7½	150.21	.75
8	170.90	1.10

*In our Chicago stock.

CARILLOY HOT ROLLED ROUNDS

AISI A 8742 ANNEALED

A Nickel Chromium Molybdenum steel which has proved to be one of the most popular of the triple alloy steels. Properly annealed, A 8742 machines at approximately 85 SFM. Since it hardens a little bit deeper than the older A 3140, about the same as A 4140, it is particularly good for oil quenching larger size sections but this hardenability is not so great as to preclude its use for light sections.

Fine Grain — Machine Straightened

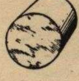
RANDOM LENGTHS 16 to 20 FEET

Size, Inches	Weight per Foot, Pounds	Extra for Size
⅜	0.376	.40
½	0.668	.20
⅝	1.04	.10
¾	1.50	Base
⅞	2.04	Base
1	2.67	Base
1⅛	3.38	Base
1¼	4.17	Base
*1⁵⁄₁₆	4.60	Base
1⅜	5.05	Base
1½	6.01	Base
1⅝	7.05	.10
1¾	8.18	.10
1⅞	9.39	.10
2	10.68	.10
2⅛	12.06	.15
2¼	13.52	.15
2⅜	15.06	.15
2½	16.69	.15
*2⅝	18.40	.20
2¾	20.19	.20
*2⅞	22.07	.20
3	24.03	.20
*3⅛	26.08	.25
*3¼	28.21	.25
*3½	32.71	.25
*3¾	37.55	.25
*4	42.73	.25
*4¼	48.23	.25
*4½	54.08	.25
*4¾	60.25	.35
*5	66.76	.35
*5¼	73.60	.45
*5½	80.78	.45
*5¾	88.29	.55
*6	96.13	.55
*6¼	104.31	.65
*6½	112.82	.65
*7	130.85	.75
*7½	150.21	.75
*8	170.90	1.10

*In our Chicago stock.

COLD FINISHED ROUNDS

AISI-A 3115-3120 — FINE GRAIN



IN OUR CHICAGO STOCK
RANDOM LENGTHS, 12 FT.

Size, Inches	Weight Per Foot, Pounds	Extra For Size
1/4	.167	1.25
5/16	.261	1.00
3/8	.376	.90
7/16	.511	.70
1/2	.668	.70
9/16	.845	.70
5/8	1.04	.55
11/16	1.26	.45
3/4	1.50	.45
13/16	1.76	.40
7/8	2.04	.40
15/16	2.35	.40
1	2.67	.40
1 1/16	3.01	.40
1 1/8	3.38	.40
1 3/16	3.77	.40
1 1/4	4.17	.40
1 5/16	4.60	.40
1 3/8	5.05	.40
1 7/16	5.52	.40
1 1/2	6.01	.40
1 9/16	6.52	.45
1 5/8	7.05	.45
1 11/16	7.60	.45
1 3/4	8.18	.45
1 13/16	8.77	.45
1 7/8	9.39	.45
1 15/16	10.02	.45
2	10.68	.45
2 1/8	12.06	.45
2 3/16	12.78	.45
2 1/4	13.52	.45
2 3/8	15.06	.45
2 7/16	15.87	.45
2 1/2	16.69	.45
2 5/8	18.40	.50
2 3/4	20.19	.50
2 7/8	22.07	.50
2 15/16	23.04	.70
3	24.03	.70
3 1/8	26.08	.75
3 1/4	28.21	.75
3 1/2	32.71	.85
3 3/4	37.55	.90
4	42.73	1.00
4 1/4	48.23	1.10
4 1/2	54.08	1.20
4 3/4	60.25	1.20
5	66.76	1.30
5 1/2	80.78	1.75
6	96.13	2.25

COLD FINISHED ROUNDS

AISI-A 3135 ANNEALED — FINE GRAIN

IN OUR CHICAGO STOCK
RANDOM LENGTHS, 12 FT.

Size, Inches	Weight Per Foot, Pounds	Extra For Size
1/4	.167	1.25
5/16	.261	1.00
3/8	.376	.90
7/16	.511	.70
1/2	.668	.70
9/16	.845	.70
5/8	1.04	.55
11/16	1.26	.45
3/4	1.50	.45
13/16	1.76	.40
7/8	2.04	.40
15/16	2.35	.40
1	2.67	.40
1 1/16	3.01	.40
1 1/8	3.38	.40
1 3/16	3.77	.40
1 1/4	4.17	.40
1 5/16	4.60	.40
1 3/8	5.05	.40
1 7/16	5.52	.40
1 1/2	6.01	.40
1 9/16	6.52	.45
1 5/8	7.05	.45
1 11/16	7.60	.45
1 3/4	8.18	.45
1 7/8	9.39	.45
2	10.68	.45
2 1/4	13.52	.45
2 3/8	15.06	.45
2 1/2	16.69	.45
2 3/4	20.19	.50
3	24.03	.70
3 1/8	26.08	.75
3 1/4	28.21	.75
3 7/16	31.55	.85
3 1/2	32.71	.85
3 3/4	37.55	.90
3 15/16	41.40	1.00
4	42.73	1.00
4 1/4	48.23	1.00
4 1/2	54.08	1.20
4 3/4	60.25	1.20
5	66.76	1.30
5 1/2	80.78	1.75
6	96.13	2.25

For cutting and boxing extras see page 221.

HIGH STRENGT STEEL
RAILS — BOILER T
TAINLESS TEEL HEETS
PLATES — ANGLES — ROUNDS
SQUARES — HEXAGONS
FLATS — STRIP
TUBING — PIPE — ELECTRODES
TOOLS SUPPLIES & MACHINERY — DATA

COLD FINISHED ROUNDS

AISI A 8617-8620 FINE GRAIN

RANDOM LENGTHS 12 FT.

Size, Inches	Weight Per Foot, Pounds	Extra For Size	Size, Inches	Weight Per Foot, Pounds	Extra For Size
* ¼	.167	1.25	* 1 13/16	8.77	.45
* 5/16	.261	1.00	1 ⅞	9.39	.45
* ⅜	.376	.90	1 15/16	10.02	.45
* 7/16	.511	.70	2	10.68	.45
* ½	.668	.70	* 2 ⅛	12.06	.45
* 9/16	.845	.70	* 2 3/16	12.78	.45
⅝	1.04	.55	2 ¼	13.52	.45
* 11/16	1.26	.45	* 2 ⅜	15.06	.45
¾	1.50	.45	* 2 7/16	15.87	.45
* 13/16	1.76	.40	2 ½	16.69	.45
* ⅞	2.04	.40	* 2 ⅝	18.40	.50
* 15/16	2.35	.40	2 ¾	20.19	.50
1	2.67	.40	* 2 ⅞	22.07	.50
* 1 1/16	3.01	.40	* 2 15/16	23.04	.70
1 ⅛	3.38	.40	3	24.03	.70
* 1 3/16	3.77	.40	* 3 ⅛	26.08	.75
1 ¼	4.17	.40	* 3 ¼	28.21	.75
* 1 5/16	4.60	.40	3 ½	32.71	.85
1 ⅜	5.05	.40	3 ¾	37.55	.90
* 1 7/16	5.52	.40	4	42.73	1.00
1 ½	6.01	.40	* 4 ¼	48.23	1.10
* 1 9/16	6.52	.45	4 ½	54.08	1.20
1 ⅝	7.05	.45	* 4 ¾	60.25	1.20
* 1 11/16	7.60	.45	5	66.76	1.30
1 ¾	8.18	.45	* 5 ½	80.78	1.75
			* 6	96.13	2.25

*In our Chicago Stock.

COLD FINISHED ROUNDS

AISI A 4140 HEAT TREATED SAE 4140

FINE GRAIN

IN OUR CHICAGO STOCK

RANDOM LENGTHS 12 FT.

Size, Inches	Weight Per Foot, Pounds	Extra For Size	Size, Inches	Weight Per Foot, Pounds	Extra For Size
⅜	.376	.90	1 7/16	5.52	.40
7/16	.511	.70	1 ½	6.01	.40
½	.668	.70	1 ⅝	7.05	.45
9/16	.845	.70	1 ¾	8.18	.45
⅝	1.04	.55	1 ⅞	9.39	.45
11/16	1.26	.45	2	10.68	.45
¾	1.50	.45	2 ⅛	12.06	.45
13/16	1.76	.40	2 ¼	13.52	.45
⅞	2.04	.40	2 ⅜	15.06	.45
15/16	2.34	.40	2 ½	16.69	.45
1	2.67	.40	2 ¾	20.19	.50
1 1/16	3.01	.40	3	24.03	.70
1 ⅛	3.38	.40	3 ⅛	26.08	.75
1 3/16	3.77	.40	3 ¼	28.20	.75
1 ¼	4.17	.40	3 ½	32.71	.85
1 5/16	4.60	.40	3 ¾	37.55	.90
1 ⅜	5.05	.40	4	42.73	1.00

TYPICAL MINIMUM PHYSICAL PROPERTIES

Size	Tensile Strength Lbs. Per Sq. In.	Yield Point Lbs. Per Sq. In.	Elong. in 2 in.	Red. of Area	Max. Surface Brinell Hardness
2½″ and under	125,000	105,000	16%	50%	321
Over 2½″ to 4″ inc.	115,000	95,000	16%	45%	321

For cutting and boxing extras see page 221.

COLD FINISHED ROUNDS

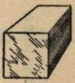
AISI A 8742 ANNEALED — FINE GRAIN

RANDOM LENGTHS 12 FT.

Size, Inches	Weight per Foot, Pounds	Extra for Size	Size, Inches	Weight per Foot, Pounds	Extra for Size	Size, Inches	Weight per Foot, Pounds	Extra for Size
* 1/4	.167	1.25	1 1/4	4.17	.40	*2 7/16	15.87	.45
* 5/16	.261	1.00	*1 5/16	4.60	.40	2 1/2	16.69	.45
* 3/8	.376	.90	*1 3/8	5.05	.40	*2 5/8	18.40	.50
* 7/16	.511	.70	*1 7/16	5.52	.40	2 3/4	20.19	.50
1/2	.668	.70	1 1/2	6.01	.40	*2 7/8	22.07	.50
* 9/16	.845	.70	*1 9/16	6.52	.45	*2 15/16	23.04	.70
5/8	1.04	.55	*1 5/8	7.05	.45	3	24.03	.70
* 11/16	1.26	.45	*1 11/16	7.60	.45	*3 1/4	28.21	.75
3/4	1.50	.45	1 3/4	8.18	.45	*3 1/2	32.71	.85
* 13/16	1.76	.40	*1 7/8	9.39	.45	*3 3/4	37.55	.90
7/8	2.04	.40	*1 15/16	10.02	.45	*4	42.73	1.00
* 15/16	2.35	.40	2	10.68	.45	*4 1/4	48.23	1.10
1	2.67	.40	*2 1/8	12.06	.45	*4 1/2	54.08	1.20
*1 1/16	3.01	.40	*2 3/16	12.78	.45	*4 3/4	60.25	1.20
1 1/8	3.38	.40	2 1/4	13.52	.45	*5	66.76	1.30
*1 3/16	3.77	.40	*2 3/8	15.06	.45	*6	96.13	2.25

*In our Chicago Stock.

COLD FINISHED SQUARES



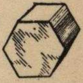
AISI A 8742 ANNEALED — FINE GRAIN

RANDOM LENGTHS 12 FT.

Size, Inches	Weight per Foot, Pounds	Extra for Size	Size, Inches	Weight per Foot, Pounds	Extra for Size	Size, Inches	Weight per Foot, Pounds	Extra for Size
1/4	.213	2.50	* 11/16	1.61	1.05	1 1/2	7.65	1.25
5/16	.332	2.50	3/4	1.91	1.05	*1 5/8	8.98	1.25
3/8	.478	1.75	7/8	2.60	1.05	*1 3/4	10.41	1.25
7/16	.651	1.75	1	3.40	1.05	*1 7/8	11.95	1.25
1/2	.850	1.30	1 1/8	4.30	1.05	*2	13.60	1.25
* 9/16	1.08	1.30	1 1/4	5.31	1.05			
5/8	1.33	1.30	1 3/8	6.43	1.25			

*In our Chicago Stock.

COLD FINISHED HEXAGONS



AISI A 8742 ANNEALED — FINE GRAIN

RANDOM LENGTHS 12 FT.

Size, Inches	Weight per Foot, Pounds	Extra for Size	Size, Inches	Weight per Foot, Pounds	Extra for Size	Size, Inches	Weight per Foot, Pounds	Extra for Size
3/8	.414	1.75	* 13/16	1.94	.60	1 3/8	5.57	.50
* 7/16	.564	1.25	7/8	2.25	.55	*1 7/16	6.09	.50
1/2	.736	.90	* 15/16	2.59	.55	1 1/2	6.63	.60
* 9/16	.932	.80	1	2.94	.50	*1 5/8	7.78	.60
5/8	1.15	.70	*1 1/16	3.32	.50	*1 3/4	9.02	.60
* 11/16	1.39	.60	1 1/8	3.73	.45	*1 7/8	10.35	.60
3/4	1.66	.60	1 1/4	4.60	.45	*2	11.78	.75

*In our Chicago Stock.

For cutting and boxing extras see page 221.

HIGH STRENGT
STEEL
RAILS
—
BOILER TU
TAINLESS
TEEL
HEETS
PLATES
—
ANGLES
—
ROUNDS
SQUARES
—
HEXAGONS
FLATS
—
STRIP
TUBING
—
PIPE
—
ELECTRODES
TOOLS
SUPPLIES &
MACHINERY
—
DATA

COR-TEN STEEL
(HIGH STRENGTH STEEL)
IN OUR CHICAGO STOCK

USS Cor-Ten is high strength, low alloy steel which has high resistance to atmospheric corrosion, good weldability, formability and impact and fatigue strength. It is intended primarily for application when substantial reductions in weight can be accomplished by proper design without sacrifice of strength or durability. Yield point is 1½ times that of structural steel and twice that of soft low carbon steel. Atmospheric corrosion resistance is 4 to 6 times that of plain steel.

COR-TEN BEAMS

Size, Inches	Weight per Foot, Pounds	Thickness of Web, Inches	Width of Flange, Inches	Extra for Size	Lengths in Stock, Feet
4	7.7	0.190	2.660	Base	40
5	10.0	0.210	3.000	Base	40
6	12.5	0.230	3.330	Base	40

COR-TEN CHANNELS

Size, Inches	Weight per Foot, Pounds	Thickness of Web, Inches	Width of Flange, Inches	Extra for Size	Lengths in Stock, Feet
3	4.1	0.170	1.410	Base	40
4	5.4	0.180	1.580	Base	40
5	6.7	0.190	1.750	Base	40
6	8.2	0.200	1.920	Base	40

COR-TEN ANGLES (Bar Sizes)

Size, Inches	Weight per Foot, Pounds	Extra for Size	Lengths in Stock, Feet
1 x1 x⅛	0.80	.30	20
1¼x1¼x⅛	1.01	.30	20
3⁄16	1.48	.25	20
1½x1½x⅛	1.23	.25	20
3⁄16	1.80	.15	20
¼	2.34	.15	20
2 x2 x⅛	1.65	.25	20

Size, Inches	Weight per Foot, Pounds	Extra for Size	Lengths in Stock, Feet
2 x2 x3⁄16	2.44	.15	20
¼	3.19	.15	20, 40
2½x2½x⅛	2.08	.25	20
3⁄16	3.07	.15	20, 40
¼	4.10	.15	20, 60
5⁄16	5.00	.15	20, 60

COR-TEN ANGLES (Structural Sizes)

Size, Inches	Weight per Foot, Pounds	Extra for Size	Lengths in Stock, Feet
3 x2 x3⁄16	3.07	.35	5-60
¼	4.1	Base	5-60
3 x3 x⅛	2.5	.75	5-60
3⁄16	3.71	.35	5-60

Size, Inches	Weight per Foot, Pounds	Extra for Size	Lengths in Stock, Feet
3 x3 x¼	4.9	Base	5-60
4 x3 x¼	5.8	.15	5-60
5⁄16	7.2	Base	5-60
4 x4 x¼	6.6	.15	5-60

We can supply Welding Electrodes for welding Cor-Ten and Man-Ten Steels. Full information and welding procedure sent upon request.

COR-TEN STEEL
(HIGH STRENGTH STEEL)

COR-TEN PLATES

Size, Inches	Weight per Lin. Ft., Pounds	Extra for Size
3/16"x48", see Cor-Ten Sheets		
3/16x60x360	38.25	Base
72x360	45.90	Base
1/4x48x120	40.80	Base
48x360	40.80	Base
60x360	51.00	Base
72x360	61.20	Base
5/16x48x360	51.00	Base
60x360	63.75	Base
72x360	76.50	Base
3/8x48x360	61.20	Base
60x360	76.50	Base

Size, Inches	Weight per Lin. Ft., Pounds	Extra for Size
3/8x72x360	91.80	Base
1/2x48x360	81.60	Base
60x360	102.00	Base
72x360	122.40	Base
5/8x72x360 Chgo.	153.00	Base
3/4x72x240 Chgo.	183.60	Base
7/8x72x240 Chgo.	214.20	Base
1 x72x240 Chgo.	244.80	Base
1 1/8x72x240 Chgo.	275.40	Base
1 1/4x72x240 Chgo.	306.00	Base
1 1/2x72x240 Chgo.	367.20	Base

COR-TEN SHEETS
HOT ROLLED
IN OUR CHICAGO STOCK

Size, Inches	Weight per Sheet, Pounds	Extra for Size
No. 7 (3/16") Wt. per Sq. Ft. 7.5		
* 48x120	300.0	Base
* 48x192	480.0	Base
3/16"x 60" & wider See Cor-Ten Plates		
No. 10 (.1345") Wt. per Sq. Ft. 5.625		
48x 96	180.0	Base
48x120	225.0	Base
48x144	270.0	Base
48x192	360.0	Base
60x 96	225.0	.15
60x120	281.3	.15
60x144	337.5	.15
60x192	450.0	.15
No. 11 (.1196") Wt. per Sq. Ft 5.0		
48x192	320.0	.05
60x120	250.0	.20
60x192	400.0	.20
72x192	480.0	.30

Size, Inches	Weight per Sheet, Pounds	Extra for Size
No. 12 (.1046") Wt. per Sq. Ft. 4.375		
48x 96	140.0	.10
48x120	175.0	.10
48x144	210.0	.10
48x192	280.0	.10
60x 96	175.0	.25
60x120	218.8	.25
60x144	262.5	.25
60x192	350.0	.25
No. 14 (.0747") Wt. per Sq. Ft. 3.125		
48x 96	100.0	.20
48x120	125.0	.20
48x144	150.0	.20
48x192	200.0	.20
60x120	156.3	.35
60x144	187.5	.35

*In our St. Louis stock.

COR-TEN SHEETS
COLD ROLLED
IN OUR CHICAGO STOCK

No. 16 (.0598") Wt. per Sq. Ft. 2.5		
48x120	100.0	...
48x144	120.0	...
48x192	160.0	...
60x120	125.0	...
60x144	150.0	...

No. 18 (.0478") Wt. per Sq. Ft. 2.0		
36x120	60.0	...
48x120	80.0	...

Sizes not listed will be cut, charging for gross weight of sizes, multiples of 12" wide and multiples of 24" long. Applicable cutting extras for carbon steel will apply.

MAN-TEN STEEL

(HIGH STRENGTH STEEL)

USS Man-Ten is particularly adapted to structural applications where its high strength and greater toughness renders it suitable. While not as resistant to atmospheric corrosion as **Cor-Ten,** it has, nevertheless, twice the atmospheric corrosion resistance of plain steel. In addition it has greater abrasion resistance and may be satisfactorily metal arc welded by observing a few simple precautions, depending upon the specific application. Lower in cost than Cor-Ten it has many weight saving applications such as its use in trucks and other mobile vehicles and in earth-moving equipment.

MAN-TEN BEAMS

IN OUR CHICAGO STOCK

Size, Inches	Weight per Foot, Pounds	Thickness of Web, Inches	Width of Flange, Inches	Extra for Size	Lengths in Stock, Feet
4	7.7	0.190	2.660	Base	5–60
5	10.0	0.210	3.000	Base	5–60
6	12.5	0.230	3.330	Base	5–60

MAN-TEN CHANNELS

IN OUR CHICAGO STOCK

Size, Inches	Weight per Foot, Pounds	Thickness of Web, Inches	Width of Flange, Inches	Extra for Size	Lengths in Stock, Feet
3	4.1	0.170	1.410	Base	5–60
4	5.4	0.180	1.580	Base	5–60
5	6.7	0.190	1.750	Base	5–60
6	8.2	0.200	1.920	Base	5–60

MAN-TEN ANGLES

IN OUR CHICAGO STOCK

Size, Inches	Weight per Foot, Pounds	Extra for Size	Lengths in Stock, Feet
2 x2 x3/16	2.44	.15	20, 40
1/4	3.19	.15	20, 40
2½x2½x¼	4.10	.15	20, 60
5/16	5.00	.15	20, 60
3 x2 x3/16	3.07	.35	5–40
1/4	4.10	Base	5–60
3 x3 x1/8	2.50	.75	5–40
3/16	3.71	.35	5–40
1/4	4.90	Base	5–60

Size, Inches	Weight per Foot, Pounds	Extra for Size	Lengths in Stock, Feet
4 x3 x¼	5.80	.15	5–60
5/16	7.20	Base	5–60
4 x4 x¼	6.60	.15	5–60
5/16	8.20	Base	5–60
3/8	9.80	Base	5–60
1/2	12.80	Base	5–60
6 x3½x½	15.30	Base	5–60
6 x4 x5/8	20.00	Base	5–60

MAN-TEN SHEETS

Annealed, Stretcher Leveled, Pickled and Oiled

IN OUR CHICAGO STOCK

Size, Inches	Weight per Sheet, Pounds	Extra for Size
No. 10 (.1345″) Wt. per Sq. Ft. 5.625		
48x 96	180.0	Base
48x120	225.0	Base
48x144	270.0	Base
48x192	360.0	Base
60x 96	225.0	.15
60x120	281.3	.15
60x144	337.5	.15
No. 12 (.1046″) Wt. per Sq. Ft. 4.375		
48x 96	140.0	.10
48x120	175.0	.10
48x144	210.0	.10
48x192	280.0	.10

Size, Inches	Weight per Sheet, Pounds	Extra for Size
No. 12 (.1046″) Wt. per Sq. Ft. 4.375		
60x 96	175.0	.25
60x120	218.8	.25
60x144	262.5	.25
No. 14 (.0747″) Wt. per Sq. Ft. 3.125		
48x 96	100.0	.20
48x120	125.0	.20
48x144	150.0	.20
48x192	200.0	.20
60x 96	125.0	.35
60x120	156.3	.35
60x144	187.5	.35

Sizes not listed will be cut, charging for gross weight of sizes, multiples of 12″ wide and multiples of 24″ long. Applicable cutting extras for carbon steel will apply.

MAN-TEN STEEL
(HIGH STRENGTH STEEL)

MAN-TEN PLATES (Annealed)

Size, Inches	Weight per Lin. Ft., Pounds	Extra for Size	Size, Inches	Weight per Lin. Ft., Pounds	Extra for Size
3/16x48x192†	30.00	Base	3/8x72x360	91.80	Base
60x360	38.25	Base	1/2x48x360	81.60	Base
72x360	45.90	Base	60x360	102.00	Base
1/4x48x360	40.80	Base	72x360	122.40	Base
60x360	51.00	Base	* 5/8x48x360	102.00	Base
72x360	61.20	Base	* 60x360	127.50	Base
5/16x48x360	51.00	Base	* 72x360	153.00	Base
60x360	63.75	Base	3/4x72x360	183.60	Base
72x360	76.50	Base	* 1 x72x360	244.80	Base
3/8x48x360	61.20	Base	* 1 1/4x72x360	306.00	Base
60x360	76.50	Base	* 1 1/2x72x360	367.20	Base

†Man-Ten Sheets Annealed.
*In our Chicago Stock.

Sizes not listed will be cut, charging for gross weight of sizes, multiples of 12″ wide and multiples of 24″ long. Applicable cutting extras for carbon steel will apply. 3/4″ and thicker must be flame cut to size.

ABRASION RESISTING SHEETS and PLATES

IN OUR CHICAGO STOCK

USS Abrasion Resisting Steel, as its name implies, is a special high strength grade of steel primarily intended to resist abrasion. It is especially valuable in screens, chutes and conveyors handling coal, coke, rock, gravel, sand, grain, etc. Abrasion Resisting Steel can be drilled, machined, punched, welded and hot formed if recommended precautions are observed but is not well adapted to cold forming.

Size, Inches	Weight per Lin. Ft., Pounds	Extra For Size	Size, Inches	Weight per Lin. Ft., Pounds	Extra For Size
No. 16x36x 96	7.50	.45	1/4x48x360	40.80	Base
48x120	10.00	.45	60x360	51.00	Base
†No. 12x48x120	17.50	.10	▲ 72x480	61.20	Base
60x120	21.88	.25	▲5/16x72x480	76.50	Base
No. 10x36x120	16.88	Base	▲3/8x72x480	91.80	Base
48x192	22.50	Base	*1/2x60x264	102.00	Base
60x192	28.13	.15	▲ 72x480	122.40	Base
72x192	33.75	.25	▲5/8x72x480	153.00	Base
3/16x48x192	30.00	Base	*3/4x48x144	122.40	Base
60x360	38.25	.20	60x240	153.00	Base
▲ 72x360	45.90	.20	▲ 72x480	183.60	Base

▲In St. Louis Stock.
*In our Pittsburgh stock.
†In our Newark stock.

Sizes not listed will be cut, charging for gross weight of sizes, multiples of 12″ wide and multiples of 24″ long. Applicable cutting extras for carbon steel will apply. 3/4″ and thicker must be flame cut to size.

For cutting and flame cutting extras, see pages 222, 223 and 224.

RAILS

STANDARD DRILLING

Section Number	Weight per Yard, Pounds	Dimensions, Inches			Track Spikes to use	Track Bolts to use	Lengths in Stock, Feet
		Height	Base	Head			
1640	16	2 3/8	2 3/8	1 11/64	3 1/2x3/8	1/2x1 3/4	Chgo.
2040	20	2 5/8	2 5/8	1 11/32	3 1/2x1/2	1/2x2	Chgo.
2540	25	2 3/4	2 3/4	1 1/2	4 x1/2	1/2x2 1/4	20,30
3040	30	3 1/8	3 1/8	1 11/16	4 x1/2	5/8x2 1/2	30
4040	40	3 1/2	3 1/2	1 7/8	5 x1/2	3/4x3	30
5040	50	3 7/8	3 7/8	2 1/8	5 1/2x9/16	3/4x3 1/4	Chgo.
6040	60	4 1/4	4 1/4	2 3/8	5 1/2x9/16	3/4x3 3/4	33
7040	70	4 5/8	4 5/8	2 7/16	5 1/2x9/16	3/4x3 3/4	Chgo.
7540	75	4 13/16	4 13/16	2 15/32	5 1/2x9/16	7/8x4	Chgo.
8040	80	5	5	2 1/2	5 1/2x9/16	7/8x4 1/8	Chgo.
8540	85	5 3/16	5 3/16	2 9/16	5 1/2x9/16	7/8x4 1/8	Chgo.
*9020	90	5 5/8	5 1/8	2 9/16	5 1/2x9/16	1 x4 5/8	Chgo.
9040	90	5 3/8	5 3/8	2 5/8	5 1/2x9/16	1 x4 3/8	Chgo.
*10020	100	6	5 1/2	2 3/4	5 1/2x9/16	1 x4 5/8	Chgo.
*10030	100	5 41/64	5 9/64	2 21/32	5 1/2x9/16	1 x4 5/8	Chgo.

*A.R.A. Sections. All other sections are A.S.C.E.

Cutting extras see page 221.

RAIL SPLICES

IN OUR CHICAGO STOCK

Section Number	Length, Inches	No. of Holes	Size Bolt Used	Weight per Joint-Pounds		
				Bars	Bolts	Total
S-1640	16 1/8	4	1/2x1 3/4	4.36	0.79	5.15
S-2040	16 1/8	4	1/2x2	4.86	0.83	5.69
*S-2540	16 1/8	4	1/2x2 1/4	5.70	0.87	6.57
*S-3040-A	16 1/8	4	5/8x2 1/2	7.41	1.52	8.93
*S-4040-A	20	4	3/4x3	11.61	2.54	14.15
S-5040	24	4	3/4x3 1/4	25.50	2.64	28.14
*S-6040	24	4	3/4x3 3/4	32.40	2.85	35.25
S-7040	24	4	3/4x3 3/4	38.60	2.97	41.57
S-7540	24	4	7/8x4	41.00	4.47	45.47
S-8040	24	4	7/8x4 1/8	44.10	4.54	48.64
S-8540	24	4	7/8x4 1/8	47.60	4.54	52.14
S-9020	24	4	1 x4 5/8	63.60	6.64	70.24
S-9040	24	4	1 x4 3/8	51.40	6.44	57.84
S-10020	24	4	1 x4 5/8	73.10	6.64	79.74
S-10030-C	24	4	1 x4 5/8	57.70	6.64	64.34

*In our stock.

Splices 16 lb. to 40 lb. incl. are plain splices.

Splices 50 lb. to 100 lb. incl. are angle splices.

Splices 16 lb. to 30 lb. incl. Drilling 4-4-1/8-4 inches.

Splices 40 lb. Drilling 5-5-1/8-5 inches.

Splices 50 lb. to 100 lb. incl. Drilling 5-5-1/16-5 inches.

IN OUR CHICAGO STOCK *IN ST. LOUIS STOCK

TRACK BOLTS

Packed in 200 lb Kegs

WITH SQUARE NUTS

Size, Inches	Extra for size	Approx. Bolts in a Keg	Size, Inches	Extra for size	Approx. Bolts in a Keg
⅜x1½	3.70	2116	¾x4¼	Base	242
*½x1¾	2.25	1012	¾x4½	Base	235
*½x2	1.90	964	⅞x3½	Base	179
*½x2¼	1.60	915	* ⅞x4	Base	169
½x2½	1.35	870	⅞x4⅛	Base	166
*⅝x2½	1.10	505	⅞x4¼	Base	164
*⅝x3	.70	462	* ⅞x4½	Base	159
*¾x3	.35	285	1 x4	Base	128
¾x3⅛	.35	280	1 x4⅜	Base	122
¾x3¼	.20	276	1 x4½	Base	120
*¾x3½	Base	266	1 x4⅝	Base	118
¾x3¾	Base	257	1 x4¾	Base	116
¾x4	Base	249	1 x5	Base	112

WITH HEXAGON NUTS

Size, Inches	Extra for size	Approx. Bolts in a Keg	Size, Inches	Extra for size	Approx. Bolts in a Keg
¾x3	.95	302	¾x4⅛	.55	258
¾x3⅛	.95	296	¾x4½	.55	246
¾x3¼	.75	291	⅞x4	.55	177
¾x3½	.55	281	1 x4⅜	.55	128
¾x3¾	.55	271	1 x4⅝	.55	123

Track Bolts $1.00 per cwt. extra for less than keg lots.

TRACK SPIKES

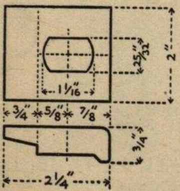
Packed in 200 lb. Kegs

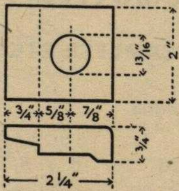
Size, Inches	Extra for size	Approx. Spikes in a Keg	Size, Inches	Extra for size	Approx. Spikes in a Keg
*5/16x2	1.70	2610	½x4	.25	583
5/16x2½	1.70	2095	†½x4½	.25	529
⅜x2½	1.15	1492	½x5	.25	485
⅜x3	.90	1293	†9/16x5	Base	345
⅜x3½	.90	1150	9/16x5½	Base	319
*7/16x3½	.65	858	†⅝x5½	Base	256
½x3	.50	735	†⅝x6	Base	239
½x3½	.50	650			

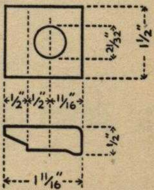
Track Spikes $1.00 cwt. extra for less than keg lots.

*In our Pittsburgh Stock. †In our Chicago Stock.

RAIL CLIPS







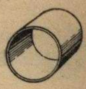
Number	Size, Inches	Hole, Inches	Weight, Pounds	Number	Size, Inches	Hole, Inches	Weight, Pounds
103	2 ¼x2	1 1/16x25/32	0.58	114	1 11/16x1½	21/32	0.24
*103	2 ¼x2	13/16	0.62	**120	3 ¼x2	13/16	0.81
106	3 ¼x2	1 1/16x25/32	1.05	128	3 ¼x2	1 1/16x25/32	0.87

*In our Chicago stock.

**In our Pittsburgh stock.

RAILS
BOILER T
TAINLESS
TEEL
HEETS
PLATES
ANGLES
ROUNDS
SQUARES
HEXAGONS
FLATS
STRIP
TUBING
PIPE
ELECTRODES
TOOLS
SUPPLIES &
MACHINERY
DATA

BOILER TUBES



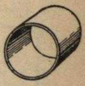
SEAMLESS STEEL

All tubes in stock meet the requirements of A.S.M.E. and A.S.T.M. specifications, and Department of Commerce, Steamboat Inspection Service Rules and Regulations. They are therefore equally suitable for Stationary and Marine Service.

Size Dia. In.	Thickness B.W. Gage	Approx. Weight Per Ft., Pounds	Lengths in Stock, Feet
1	13	1.037	10, 12, 16, 20
1¼	13	1.328	10, 12, 16, 20
1½	13	1.619	10, 12, 14, 16, 18, 20
1¾	13	1.910	12, 14, 16, 20
2	13	2.201	6, 6′6″, 7, 8, 10, 12, 14,16, 18, 20
2¼	13	2.492	Chgo. 10, 12, 14, 16, 18, 20
2½	12	3.171	10, 12, 14, 16, 18, 20
2¾	12	3.504	Chgo. 10, 12, 14, 16, 18, 20
3	12	3.838	10, 11, 12, 13, 14, 15, 16, 18, 20, 22
*3	7	6.147	9′9″, 10′4″, 11′4″
3¼	11	4.555	Chgo. 12, 14, 16, 18
3½	11	4.921	12, 14, 16, 18, 20
3½	10	5.469	Chgo. 18
*3½	7	7.247	11′8″ 13′6″
*3⁹⁄₁₆	11	5.013	18, 22
4	10	6.286	12, 14, 16, 18, 20, 22
4	9	6.915	Chgo. 16, 18, 20, 22
4½	10	7.103	Chgo. 16, 18, 20, 22
5	9	8.720	Chgo. 16, 18, 20, 22
6	7	12.750	Chgo. 16, 18, 20, 22, 24

*In our Pittsburgh stock.

LOCOMOTIVE TUBES



SEAMLESS STEEL

Size Dia. In.	Thickness B.W. Gage	Approx. Weight Per Ft., Pounds	Lengths in Stock, Feet
2	11	2.726	6, 7, 8, 9, 10, 11, 12, 14, 16, 18, 20, 22
*2¼	11	3.092	15

*In our Pittsburgh stock.

For cutting extras see page 224.

For Tube Cutters and Expanders, see pages 154 to 159.

U.S.S.-STAINLESS STEEL ROLLED YOUR WAY

STAINLESS STEEL
—
SHEETS

PLATES
—
ANGLES
—
ROUNDS

SQUARES
—
HEXAGONS

FLATS
—
STRIP

TUBING
—
PIPE
—
ELECTRODES

TOOLS SUPPLIES & MACHINERY
—
DATA

STAINLESS STEEL.....
Reference and Data Books

SERVICE

USS
STAINLESS AND HEAT RESISTING STEELS
STAINLESS STEEL IN ARCHITECTURE
The FABRICATION OF U·S·S STAINLESS STEELS
STAINLESS STEEL in the FOOD HANDLING AND PROCESSING INDUSTRIES
U·S·S STAINLESS AND HEAT RESISTING STEELS FOR THE PETROLEUM INDUSTRY
U·S·S STAINLESS STEEL VARNISH MAKING EQUIPMENT
Stainless Steel Prices

This booklet outlines the wide range of applications for U.S.S Stainless Steels, demonstrating that Stainless Steels *DO* pay their way.

A book for architects and designers containing data concerning architectural applications of U.S.S Stainless Steel. Portrays how stainless steels can be etched, tooled, sculptured and enameled.

An authoritative and comprehensive book concerning U.S.S Stainless Steels, their composition, welding, riveting, soldering, joint design, machining, cutting, forming, annealing, pickling, surface finishing and protection.

A book showing varied uses for U.S.S Stainless Steel by the food handling and processing industries. Contains supplemental information relating to cleaning, sterilizing, and maintaining stainless steel equipment.

A book for the petroleum industry which demonstrates that U.S.S Stainless and Heat resisting Steels will solve corrosion and oxidation problems. Contains table showing corrosion resistance data and properties of flat rolled and tubular stainless steel products.

A book for varnish manufacturers demonstrating the need for equipment which will be resistant to heat and to the combined corrosive effects of various raw materials used in manufacturing varnish.

Here is a Stainless Steel Price Book developed as a practical aid for every buyer of stainless steel. Thumb indexed by product groups, prices have been carefully worked out for each gage and size in all quantity brackets.

Request books desired, on your business letterhead.

UNITED STATES STEEL SUPPLY COMPANY
USS
STAINLESS
STEEL
SERVICE

1401
Buffal

P. O.
Baltir

P. O.
Newa

1617
Phila

P. O
Allst

U. S. S. STAINLESS STEELS

USS Designations and Standard Type Number with Chemical Analyses

USS Designations	Type No.	Carbon, Per Cent	Chromium, Per Cent	Nickel, Per Cent	Other Elements, Per Cent
17-7	301	Over .08-.20	16.00-18.00	6.00- 8.00	Mn 2.00 max.
18-8	302	Over .08-.20	17.00-19.00	8.00-10.00	Mn 2.00 max.
	302 B	Over .08-.20	17.00-19.00	8.00-10.00	Mn 2.00 max. Si 2.00-3.00
18-8 FM	303	.20 max.	17.00-19.00	8.00-10.00	Mn 2.00 max. S or Se .07 min. Mo .60 max.
18-8 S	304	.08 max.	18.00-20.00	8.00-10.00	Mn 2.00 max.
20-10 S	308	.08 max.	19.00-22.00	10.00-12.00	Mn 2.00 max.
25-12	309	.20 max.	22.00-24.00	12.00-15.00	Mn 2.00 max.
25-12 S	309 S	.08 max.	22.00-24.00	12.00-15.00	Mn 2.00 max.
25-20	310	.25 max.	24.00-26.00	19.00-22.00	Mn 2.00 max.
	311	.25 max.	18.00-20.00	24.00-26.00	Mn 2.00 max.
18-8 Mo	316	.10 max.	16.00-18.00	10.00-14.00	Mn 2.00 max. Mo 2.00-3.00
19-9 Mo	317	.10 max.	17.50-20.00	10.00-14.00	Mn 2.00 max. Mo 3.00-4.00
18-8 Ti	321	.10 max.	17.00-19.00	8.00-12.00	Mn 2.00 max. Ti 4 x carb. min.
	325	.50 max.	7.00-10.00	19.50-23.50	Cu 1.00-1.50
	329	.20 max.	23.00-28.00	2.50- 5.00	Mo 1.00-2.00
	330	.25 max.	14.00-16.00	33.00-36.00	....
18-8 Cb	347	.10 max.	17.00-19.00	8.00-12.00	Mn 2.00 max. Cb 8 x carb. min.
12 Turbine	403	.15 max.	11.50-13.00	....	Turbine Quality
12-Al	405	.08 max.	11.50-13.50	....	Al. .10-.30
	406	.15 max.	12.00-14.00	....	Al. 3.50-4.50
12	410	.15 max.	10.00-14.00	....	....
	414	.15 max.	10.00-14.00	2.50 max.	....
12-FM	416	.15 max.	12.00-14.00	....	S or Se .07 min. Mo .60 max.
	420	Over .15	12.00-14.00	....	....
	420 F	Over .15	12.00-14.00	....	S or Se .07 min. Mo .60 max.
17	430	.12 max.	14.00-18.00	....	....
	430 F	.12 max.	14.00-18.00	....	S or Se .07 min. Mo .60 max.
	431	.20 max.	14.00-18.00	2.50 max.	....
	440	Over .12	14.00-18.00	....	....
	441	Over .20	14.00-18.00	2.50 max.	....
21	442	.35 max.	18.00-23.00	....	....
27	446	.35 max.	23.00-30.00	....	....
5	501	Over .10	4.00- 6.00	....	....
5 S	502	.10 max.	4.00- 6.00	....	....

TYPES 302, 304, AND 316 FROM STAINLESS SHEET STOCK

TYPE 304 AND 316 FROM STAINLESS PLATE STOCK

TYPES 303 AND 416 FROM STAINLESS BAR STOCK IN VARIOUS SIZES AND FINISHES.

PROMPT DELIVERY CAN BE EFFECTED FROM MILL IN DESIRED ANALYSES AND FINISHES.

PLATES — ANGLES — ROUNDS
SQUARES — HEXAGONS
FLATS — STRIP
TUBING — PIPE — ELECTRODES
TOOLS SUPPLIES & MACHINERY — DATA

18-8 STAINLESS STEEL SHEETS

TYPES 302 and 304

2-B FINISH ANNEALED AND PICKLED—COLD ROLLED

#4 FINISH ANNEALED — POLISHED ONE SIDE

U. S. Standard Gage	Decimal Equivalent Inches	Estimated Weight per Square Inch	Shee Size	Estimated Weight per Sheet
#10	.140	.0410	36x 96"	141.8
			36x120"	177.2
			48x120"	236.2
#11	.125	.0364	36x 96"	126.0
			36x120"	157.5
			48x120"	210.0
#12	.109	.0319	36x 96"	110.2
			36x120"	137.8
			42x120"	160.8
			48x120"	183.7
			60x144"	275.5
#13	.093	.0273	36x 96"	94.5
			36x120"	118.1
			48x120"	157.4
#14	.078	.0227	30x120"	82.0
			36x 96"	78.7
			36x120"	98.4
			42x120"	114.8
			48x120"	131.2
			60x144"	196.9
#16	.062	.0182	30x120"	65.6
			36x 96"	63.0
			36x120"	78.8
			42x120"	91.9
			48x120"	105.0
			60x144"	157.5

U. S. Standard Gage	Decimal Equivalent Inches	Estimated Weight per Square Inch	Sheet Size	Estimated Weight per Sheet
#18	.050	.0146	30x 96"	42.0
			30x120"	52.5
			36x 96"	50.4
			36x120"	63.0
			42x120"	73.5
			48x120"	84.0
#20	.037	.0109	24x 96"	25.2
			30x 96"	31.5
			30x120"	39.4
			36x 96"	37.8
			36x120"	47.2
			42x120"	55.1
			48x120"	63.0
#22	.031	.0091	30x 96"	26.3
			30x120"	32.8
			36x 96"	31.5
			36x120"	39.4
			42x120"	45.9
			48x120"	52.5
#24	.025	.0073	30x 96"	21.0
			30x120"	26.3
			36x 96"	25.2
			36x120"	31.5
			48x120"	42.0
#26	.018	.0054	30x 96"	15.8
			36x 96"	18.9
			36x120"	23.6

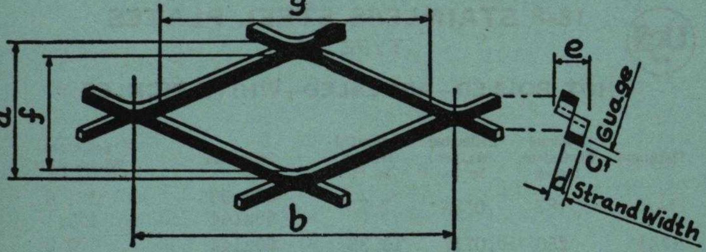
PROMPT SHIPMENT FROM MILL CAN BE EFFECTED ON ALL STANDARD TYPES AND FINISHES OF STAINLESS STEEL SHEETS

18-8 STAINLESS STEEL SHEETS
TYPE 316

2-B FINISH **ANNEALED AND PICKLED—COLD ROLLED**

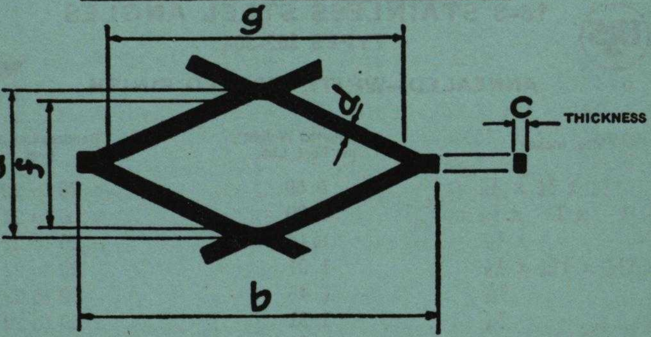
U. S. Standard Gage	Decimal Equivalent Inches	Estimated Weight per Square Inch	Sheet Size	Estimated Weight per Sheet
#10	.140	.0410	36x120″	177.2
			48x120″	236.2
#11	.125	.0364	36x120″	157.5
			48x120″	210.0
#12	.109	.0319	36x120″	137.8
			48x120″	183.7
#13	.093	.0273	36x120″	118.1
			48x120″	157.4
#14	.078	.0227	36x120″	98.4
			48x120″	131.2
#16	.062	.0182	36x120″	78.8
			48x120″	105.0
#18	.050	.0145	36x120″	63.0
			48x120″	84.0
#20	.037	.0109	36x120″	47.2
			48x120″	63.0
#22	.031	.0091	36x120″	39.4
			48x120″	52.5

EXPANDED STAINLESS STEEL SHEETS



ECONO MESH EXPANDED METAL

KEY TO DIAGRAM			
Mesh Size a x b	Opening Size f x g	Overall Thickness e	Strand c x d



SHELF-X FLATTENED EXPANDED METAL

KEY TO DIAGRAM		
Mesh Size a x b Inches	Opening Size f x g Inches	Strand c x d Inches

Expanded stainless steel sheets are available in many types, gages sizes and variations of mesh to meet the many needs of industry.

The mesh identified as "Econo" is the original stainless steel sheet as it comes from the presses having strands and strand intersections or bonds set at a sharp angle. In an additional process, the "Econo" mesh is passed through pressure rolls which flatten the material so that the strands and bonds are in the same plane; this product is the mesh known as "Shelf-X". Prompt delivery and price information available upon request.

PLATES — ANGLES — ROUNDS
SQUARES — HEXAGONS
FLATS — STRIP
TUBING — PIPE — ELECTRODES
TOOLS SUPPLIES & MACHINERY — DATA

18-8 STAINLESS STEEL PLATES
TYPE 304

HOT ROLLED—ANNEALED—WHITE PICKLED

Thickness	Decimal Equivalent, Inches	Estimated Wt. per Sq. In.	Estimated Wt. per Sq. Ft.	Plate Size	Estimated Wt. per Plate
3/16″	.187	.0538	7.75	36x 96″ 60x144″	184.6 465.1
1/4″	.250	.0717	10.33	60x144″	620.2
3/8″	.375	.1076	15.50	60x144″	930.2
1/2″	.500	.1435	20.67	60x144″	1240.3

18-8 STAINLESS STEEL PLATES
TYPE 316

HOT ROLLED—ANNEALED—WHITE PICKLED

Thickness	Decimal Equivalent, Inches	Estimated Wt. per Sq. In.	Estimated Wt. per Sq. Ft.	Plate Size	Estimated Wt. per Plate
3/16″	.187	.0538	7.75	36x 96″ 60x144″	184.6 465.1
1/4″	.250	.0717	10.33	60x144″	620.2
3/8″	.375	.1076	15.50	60x144″	930.2
1/2″	.500	.1435	20.67	60x144″	1240.3

18-8 STAINLESS STEEL ANGLES
TYPES 302-304

ANNEALED—WHITE PICKLED FINISH

Size, Inches	Estimated Weight per Foot, Lbs.	Random Lengths, Feet
3/4 x 3/4 x 1/8	0.59	20 to 22
1 x 1 x 1/8	0.80	20 to 22
x 3/16	1.16	20 to 22
1 1/4 x 1 1/4 x 1/8	1.01	20 to 22
3/16	1.48	20 to 22
1/4	1.91	20 to 22
1 1/2 x 1 1/2 x 1/8	1.23	20 to 22
3/16	1.80	20 to 22
1/4	2.34	20 to 22
2 x 2 x 1/8	1.65	20 to 22
3/16	2.44	20 to 22
1/4	3.19	20 to 22
2 1/2 x 2 1/2 x 1/8	2.08	20 to 22
3/16	3.07	20 to 22
1/4	4.10	20 to 22
3 x 3 x 1/4	4.90	20 to 22

PROMPT SHIPMENT FROM MILL CAN BE EFFECTED ON ALL STANDARD TYPES AND ANALYSES OF ABOVE STAINLESS STEEL ITEMS

18-8 STAINLESS STEEL ROUNDS

TYPE 303

FREE MACHINING

UNDER 1/2 INCH DIAMETER — ANNEALED AND COLD DRAWN
OVER 1/2 INCH DIAMETER — ANNEALED AND CENTERLESS GROUND

Size, Inches	Est. Wt. Per Foot, Pounds	Random Lengths, Feet	Size, Inches	Est. Wt. Per Foot, Pounds	Random Lengths, Feet
1/16	.010	12–16	1 7/16	5.52	12–16
5/64	.017	12–16	1 1/2	6.01	12–16
3/32	.023	12–16	1 9/16	6.52	12–16
7/64	.031	12–16	1 5/8	7.05	12–16
1/8	.042	12–16	1 11/16	7.60	12–16
9/64	.053	12–16	1 3/4	8.18	12–16
5/32	.065	12–16	1 13/16	8.77	12–16
11/64	.079	12–16	1 7/8	9.39	12–16
3/16	.094	12–16	1 15/16	10.02	12–16
7/32	.128	12–16	2	10.68	12–16
1/4	.167	12–16	2 1/16	11.36	12–16
9/32	.211	12–16	2 1/8	12.06	12–16
5/16	.261	12–16	2 3/16	12.78	12–16
11/32	.316	12–16	2 1/4	13.52	12–16
3/8	.376	12–16	2 5/16	14.28	12–16
13/32	.441	12–16	2 3/8	15.06	12–16
7/16	.511	12–16	2 7/16	15.87	12–16
15/32	.587	12–16	2 1/2	16.69	12–16
1/2	.668	12–16	2 9/16	17.53	12–16
17/32	.754	12–16	2 5/8	18.40	12–16
9/16	.845	12–16	2 11/16	19.29	12–16
5/8	1.04	12–16	2 3/4	20.19	12–16
11/16	1.26	12–16	2 13/16	21.12	12–16
3/4	1.50	12–16	2 7/8	22.07	12–16
13/16	1.76	12–16	2 15/16	23.04	12–16
7/8	2.04	12–16	3	24.03	12–16
15/16	2.35	12–16	3 1/8	26.08	12–16
1	2.67	12–16	3 1/4	28.21	12–16
1 1/16	3.01	12–16	3 1/2	32.71	12–16
1 1/8	3.38	12–16	3 3/4	37.55	12–16
1 3/16	3.77	12–16	4	42.73	12–16
1 1/4	4.17	12–16	4 1/2	54.08	12–16
1 5/16	4.60	12–16	5	66.76	12–16
1 3/8	5.05	12–16			

For

STAINLESS STEEL ELECTRODES

Refer to Page 123.

YOUR INQUIRES FOR MILL SHIPMENT OF STAINLESS STEEL ROUNDS ARE SOLICITED.

PLATES
—
ANGLES
—
ROUNDS

SQUARES
—
HEXAGONS

FLATS
—
STRIP

TUBING
—
PIPE
—
ELECTRODES

TOOLS
SUPPLIES &
MACHINERY
—
DATA

18-8 STAINLESS STEEL ROUNDS

TYPE 304

UNDER ½ INCH DIAMETER — ANNEALED AND COLD DRAWN
OVER ½ INCH DIAMETER — ANNEALED AND CENTERLESS GROUND

IN OUR NEWARK STOCK

Size, Inches	Est. Wt. Per Foot, Pounds	Random Lengths, Feet	Size, Inches	Est. Wt. Per Foot, Pounds	Random Lengths, Feet
3/32	.023	12–16	1 1/8	3.38	12–16
1/8	.042	12–16	1 3/16	3.77	12–16
5/32	.065	12–16	1 1/4	4.17	12–16
3/16	.094	12–16	1 5/16	4.60	12–16
7/32	.128	12–16	1 3/8	5.05	12–16
1/4	.167	12–16	1 7/16	5.52	12–16
5/16	.261	12–16	1 1/2	6.01	12–16
3/8	.376	12–16	1 9/16	6.52	12–16
13/32	.441	12–16	1 5/8	7.05	12–16
7/16	.511	12–16	1 3/4	8.18	12–16
1/2	.668	12–16	1 7/8	9.39	12–16
9/16	.845	12–16	2	10.68	12–16
5/8	1.04	12–16	2 1/4	13.52	12–16
3/4	1.50	12–16	2 1/2	16.69	12–16
7/8	2.04	12–16	3	24.03	12–16
1	2.67	12–16	3 1/2	32.71	12–16
1 1/16	3.01	12–16			

UNITED STATES STEEL SUPPLY COMPANY

— offers —

Complete Technical, Metallurgical and Engineering Service

STAINLESS STEELS

Consult our Stainless Steel Division

We solicit your inquiries

12 STAINLESS STEEL ROUNDS

TYPE 416

FREE MACHINING

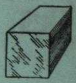
UNDER 1/2 INCH DIAMETER — ANNEALED AND COLD DRAWN
OVER 1/2 INCH DIAMETER — ANNEALED AND CENTERLESS GROUND

Size, Inches	Est. Wt. Per Foot, Pounds	Random Lengths, Feet	Size, Inches	Est. Wt. Per Foot, Pounds	Random Lengths, Feet
1/16	.010	12–16	1 7/16	5.52	12–16
5/64	.017	12–16	1 1/2	6.01	12–16
3/32	.023	12–16	1 9/16	6.52	12–16
7/64	.031	12–16	1 5/8	7.05	12–16
1/8	.042	12–16	1 11/16	7.60	12–16
9/64	.053	12–16	1 3/4	8.18	12–16
5/32	.065	12–16	1 13/16	8.77	12–16
11/64	.079	12–16	1 7/8	9.39	12–16
3/16	.094	12–16	1 15/16	10.02	12–16
7/32	.128	12–16	2	10.68	12–16
1/4	.167	12–16	2 1/16	11.36	12–16
9/32	.211	12–16	2 1/8	12.06	12–16
5/16	.261	12–16	2 3/16	12.78	12–16
11/32	.316	12–16	2 1/4	13.52	12–16
3/8	.376	12–16	2 5/16	14.28	12–16
13/32	.441	12–16	2 3/8	15.06	12–16
7/16	.511	12–16	2 7/16	15.87	12–16
15/32	.587	12–16	2 1/2	16.69	12–16
1/2	.668	12–16	2 9/16	17.53	12–16
17/32	.754	12–16	2 5/8	18.40	12–16
9/16	.845	12–16	2 11/16	19.29	12–16
5/8	1.04	12–16	2 3/4	20.19	12–16
11/16	1.26	12–16	2 13/16	21.12	12–16
3/4	1.50	12–16	2 7/8	22.07	12–16
13/16	1.76	12–16	2 15/16	23.04	12–16
7/8	2.04	12–16	3	24.03	12–16
15/16	2.35	12–16	3 1/8	26.08	12–16
1	2.67	12–16	3 1/4	28.21	12–16
1 1/16	3.01	12–16	3 1/2	32.71	12–16
1 1/8	3.38	12–16	3 3/4	37.55	12–16
1 3/16	3.77	12–16	4	42.73	12–16
1 1/4	4.17	12–16	4 1/2	54.08	12–16
1 5/16	4.60	12–16	5	66.76	12–16
1 3/8	5.05	12–16			

PROMPT SHIPMENT FROM MILL CAN BE EFFECTED ON ALL STANDARD TYPES OF STAINLESS STEEL ROUNDS

SQUARES — HEXAGONS
FLATS — STRIP
TUBING — PIPE — ELECTRODES
TOOLS SUPPLIES & MACHINERY — DATA

18-8 STAINLESS STEEL SQUARES



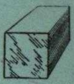
TYPE 303

FREE MACHINING

ANNEALED AND COLD DRAWN

Size, Inches	Est. Wt. Per Foot, Pounds	Random Lengths, Feet	Size, Inches	Est. Wt. Per Foot, Pounds	Random Lengths, Feet
3/16	.120	12–16	13/16	2.25	12–16
1/4	.212	12–16	7/8	2.60	12–16
5/16	.332	12–16	15/16	2.99	12–16
3/8	.478	12–16	1	3.40	12–16
7/16	.651	12–16	1 1/8	4.30	12–16
1/2	.850	12–16	1 1/4	5.31	12–16
9/16	1.08	12–16	1 1/2	7.65	12–16
5/8	1.33	12–16	1 3/4	10.41	12–16
3/4	1.91	12–16	2	13.60	12–16

12 STAINLESS STEEL SQUARES



TYPE 416

FREE MACHINING

ANNEALED AND COLD DRAWN

Size, Inches	Est. Wt. Per Foot, Pounds	Random Lengths, Feet	Size, Inches	Est. Wt. Per Foot, Pounds	Random Lengths, Feet
3/16	.120	12–16	13/16	2.25	12–16
1/4	.212	12–16	7/8	2.60	12–16
5/16	.332	12–16	15/16	2.99	12–16
3/8	.478	12–16	1	3.40	12–16
7/16	.651	12–16	1 1/8	4.30	12–16
1/2	.850	12–16	1 1/4	5.31	12–16
9/16	1.08	12–16	1 1/2	7.65	12–16
5/8	1.33	12–16	1 3/4	10.41	12–16
3/4	1.91	12–16	2	13.60	12–16

PROMPT SHIPMENT FROM MILL CAN BE EFFECTED ON ALL STANDARD TYPES OF STAINLESS STEEL BARS

P. O.
New

1617
Phil

P. C
Allst

18-8 STAINLESS STEEL HEXAGONS

TYPE 303

FREE MACHINING

ANNEALED—COLD DRAWN

Size, Inches	Est. Wt. Per Foot, Pounds	Random Lengths, Feet	Size, Inches	Est. Wt. Per Foot, Pounds	Random Lengths, Feet
1/8	.046	12–16	1 1/16	3.32	12–16
3/16	.104	12–16	1 1/8	3.73	12–16
7/32	.141	12–16	1 1/4	4.60	12–16
1/4	.184	12–16	1 5/16	5.07	12–16
5/16	.288	12–16	1 3/8	5.57	12–16
11/32	.348	12–16	1 7/16	6.09	12–16
3/8	.414	12–16	1 1/2	6.63	12–16
7/16	.564	12–16	1 5/8	7.78	12–16
1/2	.736	12–16	1 3/4	9.02	12–16
9/16	.932	12–16	1 13/16	9.67	12–16
5/8	1.15	12–16	1 7/8	10.35	12–16
11/16	1.39	12–16	2	11.78	12–16
3/4	1.66	12–16	2 3/8	16.61	12–16
13/16	1.94	12–16	2 1/2	18.40	12–16
7/8	2 25	12–16	2 5/8	20.29	12–16
15/16	2.59	12–16	2 3/4	22.27	12–16
1	2.94	12–16	3	26.50	12–16

STAINLESS STEEL HARDWARE

For prices and quantity discounts of all Stainless Steel Hardware items listed below, refer to our Stainless Steel Price Book, Pages 39 to 52, inclusive.

HEXAGON HEAD MACHINE BOLTS WITH NUTS

CARRIAGE BOLTS WITH NUTS

LAG SCREWS OR LAG BOLTS

FULL NUT

JAM NUT

HEXAGON NUTS
National Coarse Thread

FULL NUT

JAM NUT

CASTELLATED NUT

HEXAGON NUTS
National Fine Thread

HEXAGON CAP NUTS

FLAT HEAD

ROUND HEAD

OVAL HEAD

FILLISTER HEAD

MACHINE SCREWS

Flat Head

Round Head

Oval Head

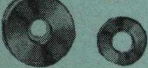
WOOD SCREWS

Square

Socket Type

Headless Slotted

SET SCREWS


FLAT WASHERS

LOCK WASHERS

COTTER PINS

NAILS

FLAT HEAD RIVETS

ROUND HEAD RIVETS

COUNTERSUNK RIVETS

SQUARES — HEXAGONS
FLATS — STRIP
TUBING — PIPE — ELECTRODES
TOOLS SUPPLIES & MACHINERY — DATA

18-8 STAINLESS STEEL FLATS

TYPES 302 AND 304

HOT ROLLED-ANNEALED-PICKLED

Size, Inches	Est. Wt. Per Foot, Pounds	Random Lengths, Feet
⅛x ½	0.213	12–16
⅝	0.266	12–16
¾	0.319	12–16
1	0.425	12–16
1¼	0.531	12–16
1½	0.639	12–16
2	0.850	12–16
2½	1.063	12–16
3	1.275	12–16
3⁄16x ½	0.319	12–16
⅝	0.398	12–16
¾	0.478	12–16
1	0.638	12–16
1¼	0.797	12–16
1½	0.956	12–16
1¾	1.116	12–16
2	1.275	12–16
2½	1.594	12–16
3	1.913	12–16
¼x ½	0.425	12–16
⅝	0.531	12–16
¾	0.638	12–16
1	0.850	12–16
1¼	1.063	12–16
1½	1.275	12–16
1¾	1.488	12–16
2	1.700	12–16
2½	2.125	12–16
3	2.550	12–16
4	3.400	12–16
5	4.250	12–16
⅜x ½	0.638	12–16
¾	0.956	12–16
⅜x1	1.275	12–16
1¼	1.594	12–16
1½	1.913	12–16
1¾	2.231	12–16
2	2.550	12–16
2½	3.188	12–16
3	3.825	12–16
4	5.100	12–16
½x ¾	1.275	12–16
1	1.700	12–16
1¼	2.125	12–16
1½	2.550	12–16
2	3.400	12–16
2½	4.250	12–16
3	5.100	12–16
4	6.800	12–16
⅝x1	2.125	12–16
1¼	2.656	12–16
1½	3.188	12–16
2	4.250	12–16
3	6.375	12–16
¾x1	2.550	12–16
1¼	3.188	12–16
1½	3.825	12–16
2	5.100	12–16
2½	6.375	12–16
3	7.650	12–16
1 x1¼	4.250	12–16
1½	5.100	12–16
1¾	5.950	12–16
2	6.800	12–16
3	10.200	12–16

For

STAINLESS STEEL ELECTRODES

Refer to Page 123.

PROMPT SHIPMENT FROM MILL CAN BE EFFECTED ON ALL STANDARD TYPES OF STAINLESS STEEL BARS

18-8 COLD ROLLED STAINLESS STEEL STRIP

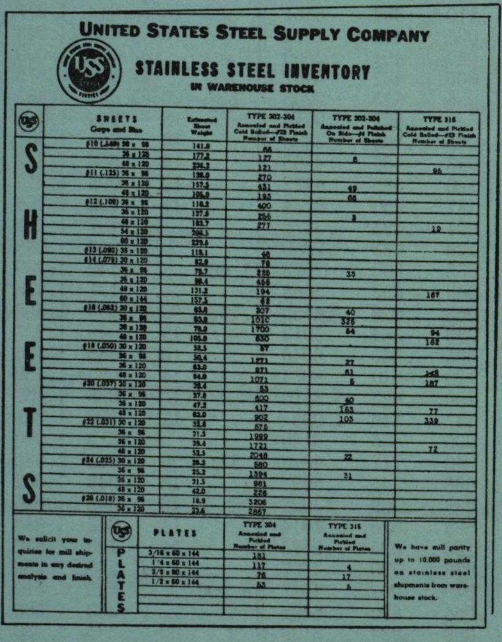
TYPE 302

No. 4 TEMPER - ROUND EDGE - No. 2 FINISH

IN OUR NEWARK STOCK

Size, Inches	Estimated Wt. per Ft., Pounds	Length, Feet
.032x ¼	.027	12
⅜	.041	12
½	.054	12
¾	.082	12
1	.109	12
.050x ½	.085	12
⅝	.106	12
¾	.127	12
1	.170	12
.062x ¼	.053	12
⅜	.080	12
½	.106	12
.062x ¾	.159	12
1	.213	12
1½	.319	12
.093x ½	.159	12
¾	.239	12
1	.319	12
1½	.478	12
.125x ½	.213	12
⅝	.266	12
¾	.319	12
1	.425	12
.187x ½	.319	12

ATTENTION!



UNITED STATES STEEL SUPPLY COMPANY

STAINLESS STEEL INVENTORY
IN WAREHOUSE STOCK

SHEETS Gage and Size	Estimated Sheet Weight	TYPE 302-304 Annealed and Pickled Cold Rolled—#2D Finish Number of Sheets	TYPE 302-304 Annealed and Polished One Side—#4 Finish Number of Sheets	TYPE 316 Annealed and Pickled Cold Rolled—#2D Finish Number of Sheets
#10 (.140) 36 x 96	141.8	66		
36 x 120	177.2	127	8	
48 x 120	236.2	121		95
#11 (.125) 36 x 96	126.0	270		
36 x 120	157.5	431	49	
48 x 120	210.0	195	66	
#12 (.109) 36 x 96	110.2	400		
36 x 120	137.8	256	8	
48 x 120	183.7	277		19
54 x 120	206.5			
60 x 120	229.6			
#13 (.093) 36 x 120	118.1	48		
#14 (.078) 30 x 120	82.0	78		
36 x 96	78.7	228	33	
36 x 120	98.4	466		
48 x 120	131.2	194		167
60 x 144	157.5	68		
#16 (.062) 30 x 120	65.6	307	40	
36 x 96	63.0	1010	326	
36 x 120	78.8	1700	64	94
48 x 120	105.0	830		162
#18 (.050) 30 x 120	52.5	87		
36 x 96	50.4	1271	27	
36 x 120	63.0	871	81	148
48 x 120	84.0	1071	5	187
#20 (.037) 30 x 120	39.4	53		
36 x 96	37.8	600	40	
36 x 120	47.2	417	163	77
48 x 120	63.0	902	103	339
#22 (.031) 30 x 120	32.8	675		
36 x 96	31.5	1999		
36 x 120	39.4	1721		72
48 x 120	52.5	2048	22	
#24 (.025) 30 x 120	26.3	580		
36 x 96	25.2	1394	31	
36 x 120	31.5	981		
48 x 120	42.0	226		
#26 (.018) 36 x 96	18.9	3206		
36 x 120	23.6	2867		

We solicit your inquiries for mill shipments in any desired analysis and finish.

PLATES	TYPE 304 Annealed and Pickled Number of Plates	TYPE 316 Annealed and Pickled Number of Plates
3/16 x 60 x 144	181	
1/4 x 60 x 144	117	4
3/8 x 60 x 144	76	17
1/2 x 60 x 144	63	6

We have mill parity up to 10.000 pounds on stainless steel shipments from warehouse stock.

Are you receiving a copy of our "Stainless Steel Inventory" of warehouse stocks, which is issued monthly?

FLATS
—
STRIP
TUBING
—
PIPE
—
ELECTRODES
TOOLS
SUPPLIES &
MACHINERY
—
DATA

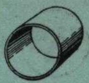
18-8 STAINLESS STEEL SEAMLESS TUBING

TYPE 304

ANNEALED - WHITE PICKLED - INSIDE AND OUTSIDE

Random Lengths

Size O. D.	Average Wall Thickness		Size I. D.	Wt. Per Ft., Lbs.
	B. W. Ga.	Dec. Inches		
1/8	20	.035	.055	.0336
3/16	20	.035	.117	.0572
1/4	20	.035	.180	.0804
	18	.049	.152	.1052
	16	.065	.120	.1284
5/16	20	.035	.242	.1039
	18	.049	.214	.1382
	16	.065	.182	.1722
3/8	20	.035	.305	.1271
	18	.049	.277	.1706
	16	.065	.245	.2152
	14	.083	.209	.2588
.405	....	.068	.269	.2447
	....	.095	.215	.3145
7/16	20	.035	.367	.1506
	18	.049	.339	.2036
	16	.065	.307	.2589
	14	.083	.271	.3147
1/2	20	.035	.430	.1738
	18	.049	.402	.2360
	16	.065	.370	.3020
	14	.083	.334	.3696
	11	.120	.260	.4870
.540	....	.088	.364	.4248
	....	.119	.302	.5351
9/16	20	.035	.493	.1974
	18	.049	.464	.2690
	16	.065	.432	.3457
5/8	20	.035	.555	.2205
	18	.049	.527	.3014
	16	.065	.495	.3888
	14	.083	.459	.4805
	11	.120	.385	.6472
	3/16	.187	.250	.8774
.675	....	.091	.493	.5676
	....	.126	.423	.7388
3/4	20	.035	.680	.2673
	18	.049	.652	.3668
	16	.065	.620	.4755
	14	.083	.584	.5913
	13	.095	.560	.6646
	11	.120	.510	.8074
.840	....	.109	.622	.8510
	....	.147	.546	1.088
7/8	20	.035	.805	.3140
	18	.049	.777	.4323
	16	.065	.745	.5623
	14	.083	.709	.7021
	13	.095	.685	.7914
	11	.120	.635	.9676
1	20	.035	.930	.3607
	18	.049	.902	.4977
	16	.065	.870	.6491
	14	.083	.834	.8129
	13	.095	.810	.9182
	12	.109	.782	1.037
	11	.120	.760	1.128
	3/16	.187	.625	1.630
	1/4	.250	.500	2.003
1.050	....	.113	.824	1.131
	....	.154	.742	1.474
1 1/8	20	.035	1.055	.4074
	18	.049	1.027	.5631
	16	.065	.995	.7359
	14	.083	.959	.9237
	13	.095	.935	1.045
	12	.109	.907	1.183
	11	.120	.885	1.288
	3/16	.187	.750	1.881
	1/4	.250	.625	2.336
1 1/4	20	.035	1.180	.4542
	18	.049	1.152	.6285
	16	.065	1.120	.8826
	14	.083	1.084	1.034
	13	.095	1.060	1.172
	12	.109	1.032	1.328
	11	.120	1.010	1.448
	3/16	.188	.875	2.132
	1/4	.250	.750	2.670
	3/8	.375	.500	3.504
1.315	....	.133	1.049	1.679
	....	.179	.957	2.172
1 3/8	20	.035	1.305	.5009
	18	.049	1.277	.6939
	16	.065	1.245	.9094
	3/16	.187	1.000	2.383
	1/4	.250	.875	3.004
1 1/2	20	.035	1.430	.5476
	18	.049	1.402	.7593
	16	.065	1.307	.9962
	14	.083	1.334	1.256
	13	.095	1.310	1.426
	11	.120	1.260	1.769
	3/16	.187	1.125	2.634
	1/4	.250	1.000	3.338
1.660	....	.140	1.380	2.270
	....	.191	1.278	2.977
1 5/8	20	.035	1.555	.5943
	18	.049	1.527	.8248
	16	.065	1.495	1.083
	14	.083	1.459	1.367
	13	.095	1.435	1.552
	11	.120	1.385	1.929
	5/16	.312	1.000	4.386
1 3/4	20	.035	1.680	.6411
	18	.049	1.652	.8902
	16	.065	1.620	1.170
	14	.083	1.584	1.478
	11	.120	1.510	2.089
	1/4	.250	1.250	4.005
1.900	....	.145	1.610	2.720
	....	.200	1.500	3.631
2	20	.035	1.930	.7345
	18	.049	1.902	1.021
	16	.065	1.870	1.343
	14	.083	1.834	1.699
	13	.095	1.810	1.933
	12	.109	1.782	2.201



18-8 STAINLESS STEEL SEAMLESS TUBING

TYPE 304

ANNEALED - WHITE PICKLED - INSIDE AND OUTSIDE

RANDOM LENGTHS

Size O. D.	Average Wall Thickness		Size I. D.	Wt. Per Ft. Lbs.
	B. W. Ga.	Dec. Inches		
2	11	.120	1.760	2.409
	³⁄₁₆	.188	1.625	3.638
	¼	.250	1.500	4.673
	⅜	.375	1.250	6.508
2¼	18	.049	2.152	1.152
	16	.065	2.120	1.517
	13	.095	2.060	2.186
	12	.109	2.032	2.492
	11	.120	2.010	2.730
	³⁄₁₆	.188	1.875	4.140
	¼	.250	1.750	5.340
	⅜	.375	1.500	7.509
2⅜	16	.065	2.245	1.604
	¼	.250	1.875	5.674
2.375	....	.154	2.067	3.650
	....	.218	1.939	5.022
2½	18	.049	2.402	1.283
	16	.065	2.370	1.690
	11	.120	2.260	3.050
	³⁄₁₆	.188	2.124	4.642
	¼	.250	2.000	6.008
	⅜	.375	1.750	8.511
2¾	16	.065	2.620	1.864
	11	.120	2.510	3.371
	¼	.250	2.250	6.675
2.875	....	.203	2.469	5.790
	....	.276	2.323	7.661
3	16	.065	2.870	2.037
	14	.083	2.834	2.586
	12	.109	2.782	3.365
	11	.120	2.760	3.691
	¼	.250	2.500	7.343
	½	.500	2.000	13.35
3¼	16	.065	3.120	2.211
	11	.120	3.010	4.011
3½	16	.065	3.370	2.385
	11	.120	3.260	4.332
3.500	....	.216	3.068	7.580
	....	.300	2.900	10.25
3¾	11	.120	3.510	4.652
4	14	.083	3.834	3.472
	11	.120	3.760	4.973
	10	.134	3.752	5.533
	³⁄₁₆	.187	3.625	7.645
	¼	.250	3.500	10.01
	⅜	.375	3.250	14.52
4.000	....	.226	3.548	9.109
	....	.318	3.364	12.50
4.500	....	.237	4.026	10.79
	....	.337	3.826	14.98
5	11	.120	4.760	6.254
	¼	.250	4.500	12.68
5.563	....	.258	5.047	14.62
6.625	....	.280	6.065	18.79

U.S.S. Seamless Stainless Steel Tubing is available in many types, sizes, and gages, and in various shapes and finishes.

You are assured of obtaining the highest quality steels because every pound of U.S.S. Stainless Steel is made by specially trained personnel in plants particularly adapted for its manufacture.

TUBING
—
PIPE
—
ELECTRODES

TOOLS
SUPPLIES &
MACHINERY
—
DATA

18-8 STAINLESS STEEL SEAMLESS PIPE

Standard Iron Pipe Sizes

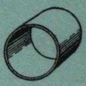
TYPE 304

COLD DRAWN—ANNEALED—WHITE PICKLED

RANDOM LENGTHS

Iron Pipe Size, Inches	Approx. Diameter, Inches		Approx. Wall Thickness, Inches	Approx. Wt. Per Foot, Pounds
	O. D.	I. D.		
⅛	.405	.269	.068	.245
¼	.540	.364	.088	.424
⅜	.675	.493	.091	.567
½	.840	.622	.109	.850
¾	1.050	.824	.113	1.130
1	1.315	1.049	.133	1.680
1¼	1.660	1 380	.140	2.270
1½	1.900	1.610	.145	2.720
2	2.375	2.067	.154	3.650
2½	2.875	2.469	.203	5.790
3	3.500	3.068	.216	7.580
3½	4.000	3.548	.226	9.109
4	4.500	4.026	.237	10.79
5	5.563	5.047	.258	14.62
6	6.625	6.065	.280	18.79

18-8 STAINLESS STEEL SEAMLESS PIPE



Extra Heavy Iron Pipe Sizes

TYPE 304

COLD DRAWN—ANNEALED—WHITE PICKLED

RANDOM LENGTHS

Iron Pipe Size, Inches	Approx. Diameter, Inches		Approx. Wall Thickness, Inches	Approx. Wt. Per Foot, Pounds
	O. D.	I. D.		
⅛	.405	.215	.095	.315
¼	.540	.302	.119	.535
⅜	.675	.413	.126	.738
½	.840	.546	.147	1.088
¾	1.050	.742	.154	1.474
1	1.315	.957	.179	2.172
1¼	1.660	1.278	.191	2.997
1½	1.900	1.500	.200	3.631
2	2.375	1.939	.218	5.022
2½	2.875	2.323	.276	7.661
3	3.500	2.900	.300	10.25
3½	4.000	3.364	.318	12.50
4	4.500	3.826	.337	14.98
5	5.563	4.813	.375	20.78
6	6.625	5.761	.432	28.57

SMITHWAY STAINLESS STEEL ELECTRODES

S. W. Type No.	DESCRIPTION	I. & S. Inst. Type No.	STANDARD SIZES (Inches)	
			Diam.	Length
SW 151	**4-6% Chromium—0.5% Molybdenum** For welding types 501 and 502 steels. For high resistance to oxidation and sulphide corrosion at high temperatures. Green coating—Grey tip—Blue secondary	502	1/4 3/16 5/32 1/8 3/32	15 15 15 15 12
SW 153	**11-13% Chromium—Mo.—Cb.** For welding 11-13% chromium, non-hardening steel, type 405. Green coating—Grey tip—Brown secondary.	410	1/4 3/16 5/32 1/8 3/32	15 15 15 15 12
SW 154	**16% Chromium.** For welding type 430 steel. Resists corrosion by oxidizing acids. Green coating—Grey tip—Green secondary.	430	3/16 5/32 1/8 3/32	15 15 15 12
SW 157	**19% Cr.—9% Ni.—Cb.** Recommended for types 347 and 321. Stabilized with Columbium (in core wire) to prevent carbide precipitation. Green coating—Yellow tip—Blue secondary.	347	3/16 5/32 1/8 3/32	15 15 15 12
SW 158	**19% Cr.—9% Ni.—3-4% Mo.—Cb.** For welding 18-8 and 19-9 Molybdenum Stainless Steel alloys. Stabilized with Columbium. Green coating—Yellow tip—Green secondary.	317 + Cb.	1/4 3/16 5/32 1/8 3/32	15 15 15 15 12
SW 159	**25% Cr.—20% Ni.** For welding types 310 Cr.-Ni. steel to resist oxidation at high temperatures—Also for welding high carbon and alloy steels for high strength and ductility. Green coating—dark red tip.	310	1/4 3/16 5/32 1/8 3/32	15 15 15 15 12
SW 160	**19% Cr.—9% Ni.—2-3% Mo.** For welding type 316. Resists corrosion from sulphurous acids or gases and many other chemicals. Green coating—Yellow tip—White secondary.	316	1/4 3/16 5/32 1/8 3/32	15 15 15 15 12
SW 161	**19% Cr.—9% Ni.—3-4% Mo.** For welding type 317. Similar to SW160 except for additional Moly. to give greater corrosion resistance. Green coating—Yellow tip—Brown secondary.	317	1/4 3/16 5/32 1/8 3/32	15 15 15 15 12
SW 162	**19% Cr.—9% Ni.** For general purpose welding of 18-8 and 19-9 stainless steels types 301, 302, 304, 305, 307 and 308. Also varied uses with other steels. Green coating—Yellow tip.	308	1/4 3/16 5/32 1/8 3/32	15 15 15 15 12
SW 164	**19% Cr.—9% Ni.—3-4% Mn.** A Manganese modified austenitic electrode for welding Hi-Tensile air hardening steels. Has high impact and shock resistance. Green coating—Yellow tip—Orange secondary.	307 + Mn.	5/16 1/4 3/16 5/32 1/8	18 18 15 15 15
SW 166	**25% Cr.—12% Ni.** For welding type 309. Also for 18-8 stainless clad steel and surfacing mild steel to compensate for dilution. For strength and resistance to oxidation at high temperatures. Green coating—Black tip—White secondary	309	1/4 3/16 5/32 1/8 3/32	15 15 15 15 12
SW 167	**25% Cr.—12% Ni.—Cb.** Same as SW166 except stabilized with Columbium. For welding material of same analysis. Green coating—Black tip—Blue secondary.	309 + Cb.	3/16 5/32 1/8 3/32	15 15 15 12
SW 168	**25% Cr.—20% Ni.—3%Mo.** Designed for welding 18-8 + 2-3% Mo. (type 316) and 18-8 + 3-4% Mo. (type 317) against mild steel to compensate for dilution. Green coating—Red tip—White secondary.	310 + Mo.	1/4 3/16 5/32 1/8 3/32	15 15 15 15 12
SW 169	**25 %Cr.—20% Ni.—Cb.** Designed for welding 19-9 + Cb. (type 347) against mild steel to compensate for dilution. Green coating—Red tip—Blue secondary.	310 + Cb.	1/4 3/16 5/32 1/8 3/32	15 15 15 15 12

Standard Packages 25 Lbs.

USS

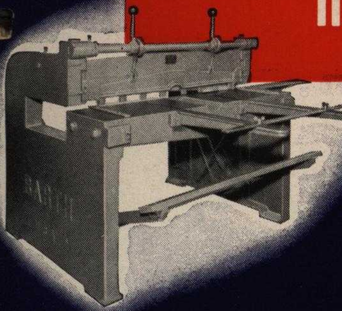
STAINLESS STEEL

is attractive
easy to clean
corrosion resistant

UNITED STATES STEEL SUPPLY COMPANY
USS
★ STAINLESS STEEL ★
SERVICE

HAS GREAT STRENGTH
EMINENTLY PRACTICAL
AND
IT PAYS ITS WAY

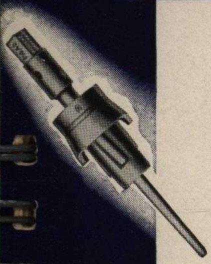
tools, supplies and machinery

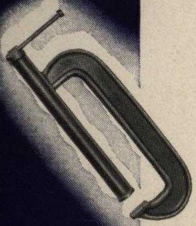


For BOILERMAKERS,
TANK BUILDERS,
SHEET METAL SHOPS
and WELDING SHOPS

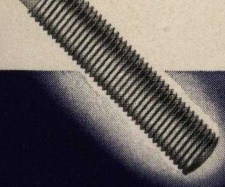
For NEW WORK

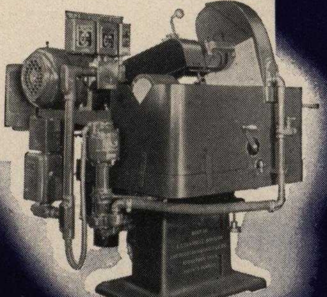
For REPAIR WORK





- BOILER BRACES
- CHAIN—CHAIN SLINGS
- CLAMPS
- COPPER FERRULES
- SOAPSTONE CRAYONS
- EXPANDED METAL
- FLANGES—Boiler and Welding
- FLUE CLEANERS
- FLUE CUTTERS
- FLUE EXPANDERS
- HOISTS—TROLLEYS
- MANHEADS
- PAINT STICKS
- SAW BLADES
- STAYBOLTS—Boiler
- TOOLS—Hand and Pneumatic
- WELDING MACHINES
- WELDING RODS
- BRAKES—Hand and Power
- CUTTERS—Bar
- GRINDERS
- GRINDING WHEELS
- ROLLS—Bending
- SAWS—Power
- SHEARS—Sheet and Plate



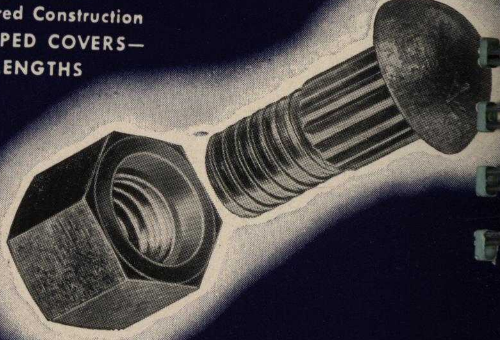


MANHATTAN RUBBER PRODUCTS and DARDELET RIVET BOLTS

We are prepared to give you prompt service on these items and we solicit your orders and inquiries.

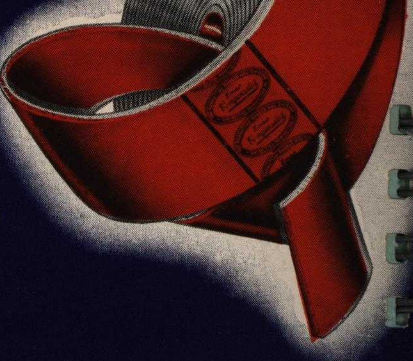
HOMO-FLEX HOSE

Balanced Engineered Construction
BRAIDED—WRAPPED COVERS—
50-FOOT LENGTHS



DARDELET RIVET BOLT

An improved fastener for structural work which is made of high-strength steel. Installed with hand hammer and wrench, it produces a stronger, stiffer and more economical joint



The Low Tension Rubber Belt with Equalized Ply Stresses.

TOOLS

SUPPLIES

and

MACHINERY

VELDING
ELECTRODES
—
VELDERS

EVERLASTING
VALVES

EAVES
TROUGH &
ACCESSORIES

EXPANDED
METAL
—
GRATING

CHAIN
CHAIN HOISTS
TROLLEYS

OILER
ACCESSORIES

HAND TOOLS

RIVET BOLTS
—
RIVETS

UBE
EXPANDERS &
UTTERS

BELTING
—
HOSE

SAW BLADES

MACHINERY

LOADS
—
STRUCTURAL
SECTIONS

COLOR CODE

AISI & SAE
SPECIFICA-
TIONS

AVERAGE
PHYSICAL
PROPERTIES

TOLERANCES
—
CUTTING
EXTRAS

EFERENCE
ABLES
—
TA

BERGSTROM HARD SURFACING ELECTRODES

Bergstrom Electrodes are totally metallic and can be applied to all ferrous metals. They are free flowing and are easy for any welder to apply.

Bergstrom Electrodes are applied either A.C. or D.C., straight or reverse polarity, with equal ease. They are all position electrodes for horizontal, vertical and overhead applications.

Bergstrom Electrodes are slag free—can be laid bead over bead without chipping or wire brushing. They create a dense deposit and a perfect bond. Can be run vertical and even overhead. The weld deposits can be forged and heat treated. They are free from porosity and have no "spatter-loss."

Furnished in sizes 1/8", 5/32", 3/16" and 1/4" diameter.

Standard containers—10 and 50 pounds.

RANALLOY TYPE "A"

Shipped from St. Paul, Minn., St. Louis, Mo., and Reno, Nev.

Color—Silver Tip—Rockwell 50 "C" scale—Average as deposited.

This electrode produces a very strong metallic deposit, possessing excellent wearing qualities with exceptional ductility. It is highly recommended for abrasion resistance against earth, various grains and metals. It bonds perfectly, with good penetration and yields a high strength deposit. Not subject to cracking or spalling.

RANALLOY TYPE "B"

Shipped from St. Paul, Minn., and Reno, Nevada

Color—Gold Tip—Rockwell 53 "C" Scale—Average as deposited.

Yields the greatest resistance to wear, plus high impact value. Bonds perfectly with good penetration and yields an extra high strength deposit.

RANALLOY TYPE "C"

Shipped from St. Paul, Minn., St. Louis, Mo., and Reno, Nevada.

Color—Green Tip—Rockwell 46-48 "C" Scale—Average as deposited.

Type C" is definitely a leader in the low priced field, producing results far beyond its price class. Of medium hardness, it is very tough and strong, and possesses good wearing qualities. It is extensively used in the heavy construction industry and on dredging equipment. Excellent bonding, with fine penetration, yielding a strong tough deposit. Not subject to cracking or spalling.

FLEXALOY

Shipped from St. Paul, Minn., and Reno, Nevada.

Color—Red Tip—Rockwell 55 "C" Scale—Average as deposited.

Flexaloy is a new development in hard surfacing electrodes. It is tough and has great flexibility. Used mostly in the heavy construction and dredge industry. Wear resistance is good against earth and some grains, sugar cane, etc. Penetration and bonding are so perfect that quick repairs can be made without dismantling machinery. Not subject to cracking or spalling.

SUPRALOY

Shipped from St. Paul, Minn., and Reno, Nevada.

Color—Yellow Tip—Rockwell 62-64 "C" Scale—Properly applied.

Supraloy is the hardest electrode in the Bergstrom line and developed for extreme metal to metal wear. In spite of its great hardness it is also tough. Perfect bonding and penetration.

TRACKALOY

Shipped from St. Paul, Minn., and Reno, Nevada.

Color—Blue Tip—Rockwell 30 "C" Scale—Properly applied.

Trackaloy is a very distinctive electrode in this line and was developed for Caterpillar track coils. It is used on frogs, switches, charging car rails, wheels, etc. In spite of its low hardness yielding exceptional ductility, it has good abrasion qualities and high strength. It gives a very strong deposit with excellent bonding and penetration properties.

Type "S"

Shipped from Reno, Nevada.

Color—White Tip—Rockwell 29-31 ' C" Scale—Average as deposited.

Type S" is a low priced work hardening metal, designed for application subjected to extreme piening action. It has good abrasion resistance.

MANGALOY

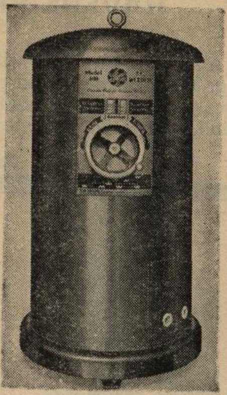
Shipped from St. Paul, Minn., and Reno, Nev.

Color—Pink Tip—Rockwell 28-30 "C" Scale—Average as deposited.

For welding manganese steels and for building up heavily worn surface prior to use of other hard surfacing metals.

Send for General Data Manual of Bergstrom Electrodes.

SMITHWAY A-C WELDER, HEAVY DUTY



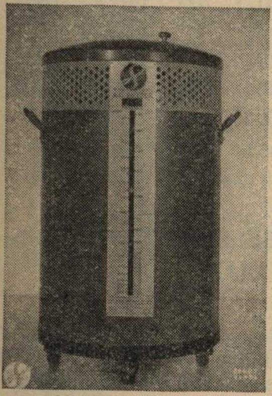
The Smithway A.C. Welder is a heavy duty, precision built machine especially designed for heavy industrial loads. Outstanding features are:

Freedom from arc blow
Low power costs
Low maintenance costs
Built for heavy duty production welding
For indoor or outdoor welding
Single continuous output control

Furnished in 300, 400 and 500 ampere capacity.

All models operate on 220 or 440 volts, single phase 50 or 60 cycles.

SMITHWAY A-C WELDER



Models 150, 200 and 250.

All models are furnished either with or without capacitors for power factor correction.

Standard models operate on 220 volt, single phase current.

Machine made to order for 440 or special voltages.

Model	Rating	Welding
150	150 amps	25 to 185 amps
200	200 amps	27 to 235 amps
250	250 amps	35 to 285 amps

These units are mounted on four casters and will include standard equipment as follows:

Toggle Switch (on-off).
8 ft. primary cable with male plug and wall receptacle; 18 feet extra flexible welding cable with insulated electrode holder; 18 feet extra flexible ground cable with ground clamp; welding helmet with lens.
Prices and full information sent upon request.

PROTECT-O-METAL

No. 2

For eliminating weld spatter. No brushing, grinding or chipping to remove spatter. Simply brush or spray Protect-O-Metal No. 2 down seam to be welded and on surrounding surfaces where spatter usually collects. It is not necessary to wait for compound to dry. After welding wipe off spatter and remove compound with damp cloth.

It does not cause smoke or odor.

It improves operation of any electrode.

It provides a clean surface over which a paint finish can be readily applied.

This compound is also an excellent rust inhibitor.

Shipped in 1 and 5 gallon cans.

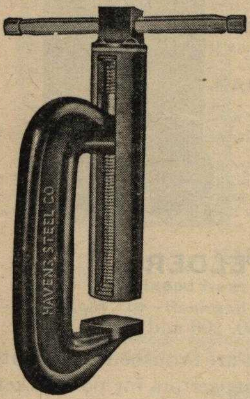
No. 7

For protecting jigs, fixtures and welding holder jaws from flash and weld spatter. It forms a hard finish which prevents flash and spatter from adhering to the fixture.

Shipped in 1 gallon cans.

HAVENS PROTECTED "C" CLAMPS

A screw clamp that will stand abuse. The body is an alloy steel casting. The bearing is phosphor bronze for easy turning. The strong compression sleeve protects threads from damage. Screw cannot buckle or bend. Every clamp tested before shipment.



Clamp Number	Width of throat inches	Depth of Gap inches	Dia. of Screw inches	Shipping Weight	Max. Working Clamping Pressure
3-L	2½"	3 "	½"	3 #	2000#
3-S	2¼"	3 "	½"	3¾#	3000#
5-L	4 "	4¼"	⅝"	6½#	3000#
5-S	2½"	4¼"	¾"	6¼#	4000#
7-L	4¾"	6¼"	⅝"	8½#	3000#
7-S	2¾"	6¼"	¾"	8¼#	5000#
9-L	4¾"	8¼"	¾"	12¾#	4000#
9-S	2¾"	8¼"	¾"	12¼#	7000#
11-L	5 "	10¼"	¾"	14½#	4000#
11-S	3 "	10¼"	⅞"	16 #	8000#
13-L	5 "	12¼"	¾"	16½#	4000#
13-S	3¼"	12¼"	⅞"	18½#	9000#

WRITE FOR PRICES

LLOYD'S STAINLESS STEEL SOLDERING FLUX

(LIQUID)

For all hard to solder metals except aluminum. With Lloyd's flux the soldering of stainless steel becomes a pleasant task. No splashing or bubbling. No choking soldering fumes or nauseating acid fumes. Lloyd's Flux insures the highest degree of workmanship. One application of Lloyd's flux is sufficient to deposit solder on both sides of lap seams simultaneously. Lloyd's Flux is furnished in pint, quart, half-gallon, gallon and 5 gallon bottles.

WRITE FOR PRICES

DIXON'S XP-320 GRAPHITE COATING FOR RUST PREVENTION

SHIPPED FROM CHICAGO

This is both a protective and lubricating material. It is made into a consistency of thin paint. A thin film is spread on with a brush. It dries to touch in approximately twenty to thirty minutes and does not allow dust or dirt to adhere to surface.

In most cases it is advisable to leave Dixon's XP-320 Graphite Coating on when assembling parts. On press or force fits it has been found that, with sametolerance, less pressure is required to assemble parts.

This Graphite Coating also acts as a lubricant when machinery is first put in operation.

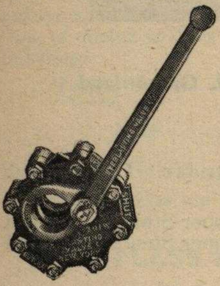
It is furnished in 1 gal. cans, 5 gal. buckets and in 10, 30 and 55 gal. drums at very reasonable prices.

Write for further particulars.

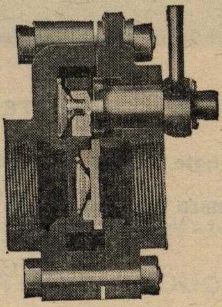
WRITE FOR PRICES

THE "EVERLASTING" VALVE

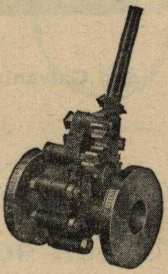
SHIPPED FROM CHICAGO



Regular Straight Lever, Screwed or Flanged End



All types Regular Everlasting Valves have the same internal construction.



Rack and Pinion Operated, Screwed or Flanged Ends.

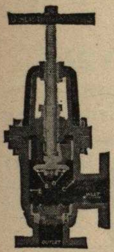
For blow-off service on boilers, water walls, water columns, etc; and a thousand and one other uses.

Straight through uninterrupted passage.

Disc rotates and regrinds itself. Dirt or scale cannot lodge under the disc to injure sealing faces because disc is held in constant contact with the seat throughout the full area of travel.

Used for handling air, steam, water, oils, gas, gasoline and acids where a dependable leak tight valve is desired.

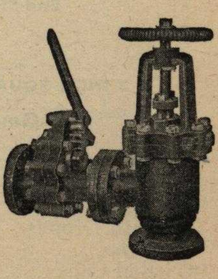
EVERLASTING COMPANION ANGLE VALVE



This valve has a V-shaped flexible ring which yields to irregularities and forms perfect seal without grinding. No pockets in valve and seating face is flat. Metal-to-metal seal-tight without packing.

EVERLASTING DUPLEX UNIT

This consists of the Regular Everlasting Valve for seal valve and Everlasting Companion Angle Valve for operating valve. The most reliable blowoff unit possible with two valves of different types.



Descriptive bulletin, with complete information and price list sent upon request.

EVERLASTING VALVES
EAVES TROUGH & ACCESSORIES
EXPANDED METAL — GRATING
CHAIN CHAIN HOISTS TROLLEYS
OILER CCESSORIES
HAND TOOLS
RIVET BOLTS — RIVETS
UBE XPANDERS & UTTERS
BELTING — HOSE
SAW BLADES
MACHINERY
LOADS — STRUCTURAL SECTIONS
COLOR CODE
AISI & SAE SPECIFICATIONS
AVERAGE PHYSICAL PROPERTIES
TOLERANCES — CUTTING EXTRAS
EFERENCE BLES
ATA

SHIPPED FROM CHICAGO

KLAUER'S HEMMED EDGE EAVES TROUGH

USS Galvanized, USS Copper STEEL Galvanized

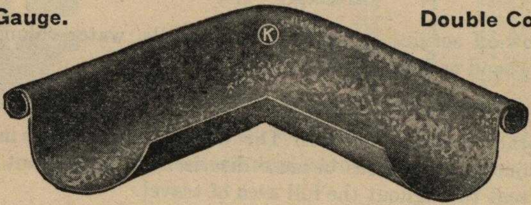
Single Bead-Lap Joint.

CARRIED IN SIZES 4", 5" AND 6"

#28 Galvanized	#28 Copper Steel Galvanized
#26 Galvanized	#26 Copper Steel Galvanized

KLAUER'S NEW ONE-PIECE MITRE

Full Gauge. **Double Coated.**



USS COPPER STEEL

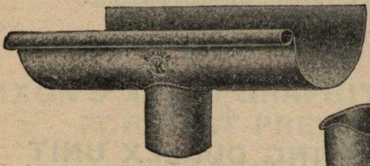
Made from 2X deep drawing terne plate stock. Hot galvanized after completely formed. Only one piece mitre made. No corner clip required. Perfectly square inside corner.

Single Bead-Lap Joint.

CARRIED IN SIZES 4", 5" AND 6"

#28 and #26 Galvanized.

KLAUER'S END PIECES—Double Seamed



End Piece with Drop

End Cap

Drop

3 INCH SQUARE DROPS ALSO CARRIED IN STOCK

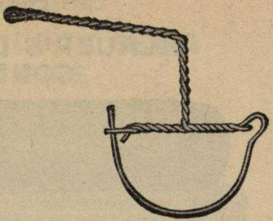
28 Gauge Galvanized Single Bead

SIZES	3 In.	4 In.	5 In.	6 In.
"A" End Piece with Drop		√	√	√
"B" Drop	√	√	√	√
"C" End Caps		√	√	√

Prices on all above on application.

SHIPPED FROM CHICAGO

"FAULTLESS" WIRE HANGERS



Made of best heavy Galvanized Wire. Holds back of trough higher than front, allowing overflow of water to flow away from building.

Triple Twist.

SIZES...............	4 In.	5 In	6 In.
Single Bead Galvanized	√	√	√

If all long stems are wanted 40c per gross additional on galvanized.

FAULTLESS STEEL CONDUCTOR HOOKS

All Steel—Hot Galvanized Finish

Will drive into any brick or stone wall without breaking or bending. Packed 100 in box.

SIZES.........	2 In.	3 In.	4 In.	5 In.	6 In.
Round...........	√	√	√	√	√
Square..........	√	√	√	√	....

KLAUER'S IMPROVED CONDUCTOR FASTENER

Galvanized, Plain or Corrugated

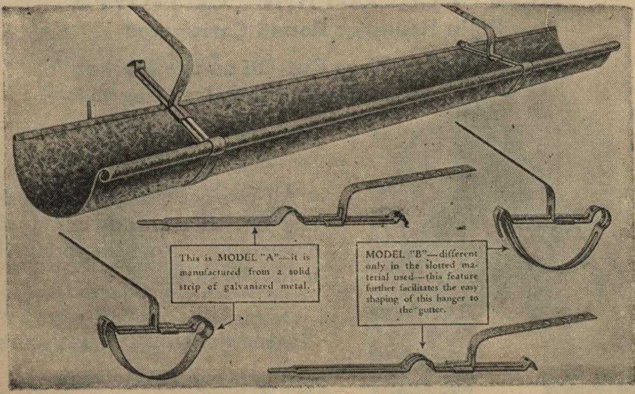
Made to off-set pipe one inch from building. When ordering specify for wood or brick. Unless specified, brick fasteners will be shipped.

SIZES.........	2 In.	3 In.	4 In.	5 In.	6 In.
Round...........	√	√	√	√	√
Square..........	√	√	√	√	....

EASYON GALVANIZED STRAP HANGERS

In addition to having many application advantages, these hangers are unusually strong.

They are made of galvanized steel, and thoroughly reinforced at the usual point of wear—in other words, where the stem and hanger meet. The stem, as well as the cross-piece, is reinforced, and a very heavy clip applied under machine pressure holds them securely.



This is MODEL "A"—it is manufactured from a solid strip of galvanized metal.

MODEL "B"—different only in the slotted material used—this feature further facilitates the easy shaping of this hanger to the gutter.

Style "A"-Single Bead.

Sizes ....4 in. — 5 in. — 6 in.

EAVES TROUGH & ACCESSORIES
EXPANDED METAL — GRATING
CHAIN
CHAIN HOISTS
TROLLEYS
OILER
CCESSORIES
HAND TOOLS
RIVET BOLTS — RIVETS
UBE
XPANDERS &
UTTERS
BELTING — HOSE
SAW BLADES
MACHINERY
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COLOR CODE
AISI & SAE SPECIFICATIONS
AVERAGE PHYSICAL PROPERTIES
TOLERANCES — CUTTING EXTRAS
EFERENCE
BLES
TA

SHIPPED FROM CHICAGO

KLAUER'S DOUBLE LOCK SEAM CONDUCTOR PIPE

Plain Round

Corrugated Round

USS Galvanized, Copper STEEL Galvanized

CARRIED IN SIZES 2", 3", 4", 5" AND 6"

#28 and #26 Galvanized and Copper Steel Galvanized

PLAIN ROUND GALVANIZED PIPE (SMALL SIZES)

1 in. 1¼ in. 1½ in.

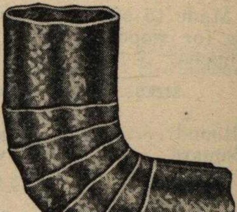
KLAUER'S NEW FAULTLESS ELBOWS

Plain and Corrugated Round Elbows and Shoes

Galvanized after formed. The only elbow made with a lock seam its entire length.

No. 2—60°

No. 3—75°


No. 4—90°

CARRIED IN SIZES 2", 3", 4", 5" AND 6"

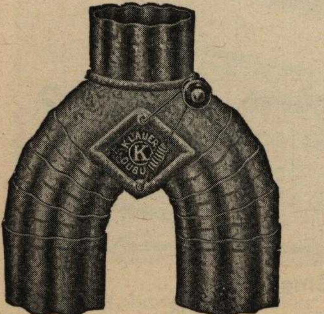
#28 and #26 Galvanized and Copper Steel Galvanized

NEW "PERFECTION" CUT-OFFS

Plain Round or Round Corrugated

The Only One-Piece Cut-Off on the Market

Collar Tongued on before Galvanizing



All connections are interlocked and Cut-off is regalvanized after assembling. Note the spring that holds the valve.

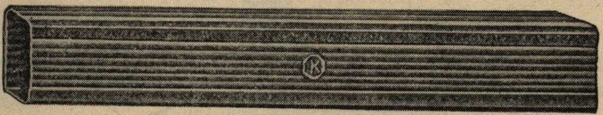
CARRIED IN SIZES 2", 3", 4", 5" AND 6"

#28 and #26 Galvanized

SHIPPED FROM CHICAGO

KLAUER'S DOUBLE LOCK SEAM CONDUCTOR PIPE

SQUARE CORRUGATED

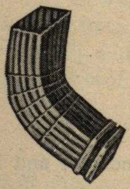


USS Galvanized, USS Copper Steel Galvanized

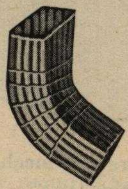
SIZE	2 In.	3 In.	4 In.	5 In.
DIMENSIONS	1¾x2¼	2⅜x3¼	2¾x4¼	3¾x5

#28 and #26 Galvanized.
#28 and #26 Copper Steel Galvanized.

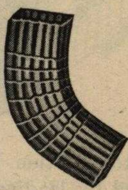
SQUARE CORRUGATED ELBOWS AND SHOES



Style "A" Shoe



Style "A" Elbow



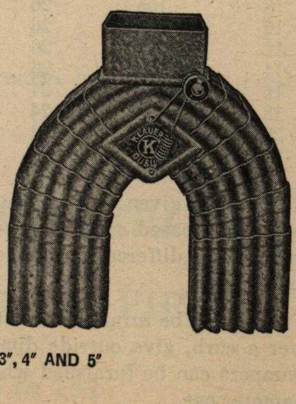
Style "B" Elbow

USS Galvanized, USS Copper Steel Galvanized

CARRIED IN SIZES 2", 3", 4" AND 5"

Elbows and Shoes carried in #28 and #26, Galvanized and Copper Steel Galvanized.

NEW "PERFECTION" CUT-OFFS



USS Galvanized

Square Corrugated

Cut-off lever and trough are of practical design. The substantial spring holds the trough in place against the down thrust of water. The high collar is interlapped or seamed into position and hot galvanized after assembling, assuring a substantial One-piece Cut-off.

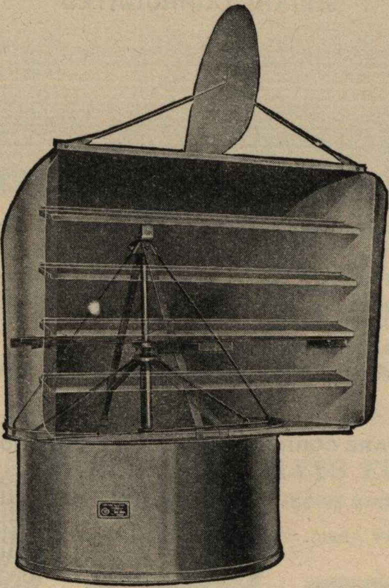
CARRIED IN SIZES 2" 3", 4" AND 5"

Carried in #28 and #26 Galvanized.

SHIPPED FROM DUBUQUE, IOWA

MONITOR SUCTION VENTILATORS

(Rotating Type)



Monitor Suction Ventilators are mechanically correct and are approved by leading architects.

Rotates on a pivot dust-proof ball bearing and controlled by a large vane. Always faces away from the wind. The power of the passing breeze continually creates an active suction at the mouth of the Ventilator, which creates a steady flow of used air from below.

Ventilator Head will turn easily in the slightest breeze and yet is so strongly constructed that it will withstand the gale and work efficiently in all kinds of weather. The Head is storm-proof.

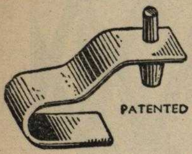
Size	Exhaust Capacity Suction	Gage Steel	Size	Exhaust Capacity Suction	Gage Steel
8	155	26	30	2198	22
10	243	26	36	3165	22
12	351	26	42	4306	22
14	479	26	48	5628	20
16	625	24	54	7120	20
18	790	24	60	8790	20
20	976	24	66	10637	20
24	1405	24	72	12661	20

Exhaust as given above is the number of cubic feet of air exhausted per minute based on a wind velocity of five miles per hour, with temperature difference of 20 degrees F., ventilator located 35 feet above floor.

Bases can be furnished to fit pitch of roof. If Bases are to set over a curb, give outside dimensions of curb, also pitch of roof. Dampers can be furnished where required at 10¢ per inch of flue diameter net.

PATTERSON ROOFING CLIP

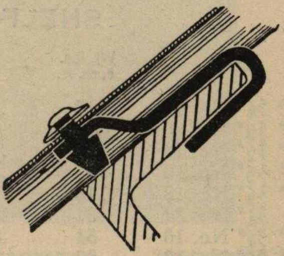
Patterson Clips Are Made of No. 12 x ⅝ Open Hearth Steel and Then Galvanized



Saves half the labor costs in fastening corrugated siding or roofing to steel structures. Can be fastened to practically any type or size of structural steel shape.

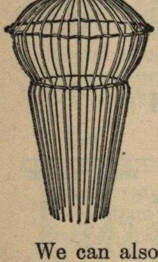
How it is done: In putting on roofing or siding, the helper on the inside sets the clip in place. The mechanic quickly draws the rivet or Clip through the metal with rivet set. Next he places burr or washer over the rivet, then flattens or mashes the rivet, the steel structural shape acting as a dolly. Sometimes the Clips are fastened to the sheets before placing.

An improvement over strap fasteners because of time saved in installation, and elimination of play between the corrugated sheet and structural shape.



Sectional view showing the Patterson Clip fitted over the flange of the purlin and fastened to the corrugated roof sheet.

25 to 30 clips are generally required for 100 square feet of roofing. Quantities packed and shipping weights 1,000, 72 lbs.; 500, 36 lbs.; 250, 19 lbs. Also shipped in bulk in any quantities. Weight of clips is 15 to the pound. Each clip is furnished with a steel burr.



CONDUCTOR PIPE STRAINERS

SHIPPED FROM CHICAGO

Sizes	LEAD COATED	
	Round	Square
2 in.	√	√
3 in.	√	√
4 in.	√	√
5 in.	√	√
6 in.	√	....

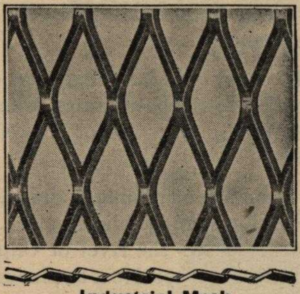
We can also furnish Galvanized Strainers but will supply Lead Coated unless otherwise specified.

FOR EAVES TROUGH

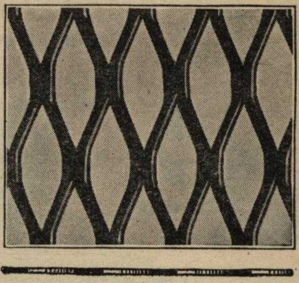
AND CONDUCTOR PIPE

See Pages 128 to 131

EXPANDED METAL



Industrial Mesh



Shelf—X

Expanded metal is extensively used for many industrial purposes such as partitions, guards for windows, skylights, elevator shafts, cage enclosures, machines, catwalks, etc., and for many products where an open mesh is desired. It has greater rigidity than an equal weight of solid steel or wire mesh. Can be cut to size or shape without loss of its original strength. Expanded metal has no sharp edges.

Short way of diamond is first dimension or width.

SHELF-X (Flattened)

Style	Wt. lbs. c. sq. ft.	Mesh Size	Opening Size	Size	
				Width	Length
* ¼″ No. 18	117	.26 x 1.03	.100 x .75	4′	8′
* ½″ No. 40	40	.5 x 1.25	.375 x 1.03	3′ & 4′	8′
* ½″ No. 18	70	.5 x 1.25	.313 x 1.0	3′ & 4′	8′
* ½″ No. 16	87	.5 x 1.25	.298 x 1.0	3′ & 4′	8′
* ½″ No. 13	146	.496 x 1.30	.281 x .937	4′	8′
¾″ No. 34	34	.875 x 2.06	.718 x 1.75	3′ & 4′	8′
* ¾″ No. 16	54	.891 x 2.15	.656 x 1.78	3′ & 4′	8′
* ¾″ No. 13	80	.891 x 2.15	.656 x 1.75	3′ & 4′	8′
* ¾″ No. 9	180	.891 x 2.15	.531 x 1.62	3′ & 4′	8′
*1″ No. 16	47	1.00 x 2.50	.800 x 2.15	3′ & 4′	8′
*1½″ No. 16	31	1.40 x 3.25	1.14 x 2.81	3′ & 4′	8′
*1½″ No. 13	60	1.35 x 3.30	1.10 x 2.80	3′ & 4′	8′
*1½″ No. 9	119	1.312 x 3.30	.991 x 2.69	3′ & 4′	8′

* Sizes carried in stock. Other sizes shipped from mill.

All Shelf-X shipped crated.

Sheets of special sizes can be supplied from mill.

Expanded Metal and Shelf-X can be supplied in stainless steel and aluminum from mill.

ECONO (INDUSTRIAL) MESH

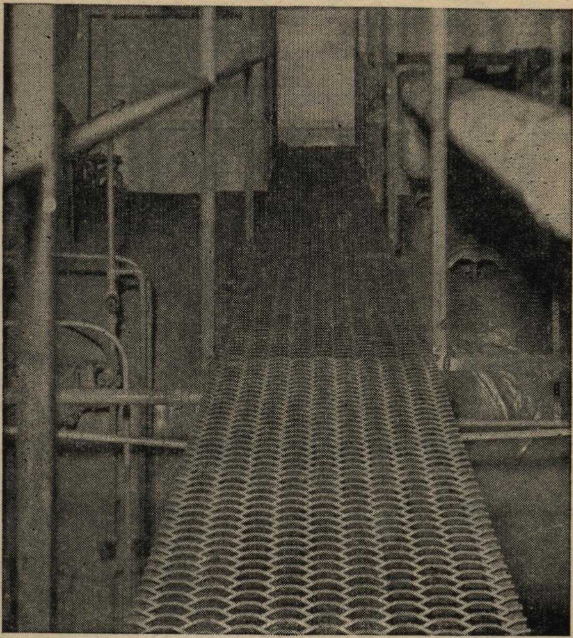
Style	Wt. lbs. c. sq. ft.	U. S. Std. Ga. Steel Used	Mesh Size	Opening Size	Size	
					Width	Length
* ¼″ No. 18	117	18	.26 x .1	.125 x .687	4′	8′
* ½″ No. 40	40	18	.497 x 1.195	.406 x .937	4′ & 6′	8′
* ½″ No. 18	70	18	.507 x 1.195	.375 x .950	4′ & 6′	8′
* ½″ No. 16	87	16	.507 x 1.195	.375 x .890	4′ & 6′	8′
½″ No. 13	146	13	.503 x 1.2	.350 x .900	6′6″	8′
¾″ No. 34	34	16	.865 x 2.	.750 x 1.688	4′	8′
* ¾″ No. 16	54	16	.880 x 2.	.700 x 1.640	4′ & 6′6″	8′
* ¾″ No. 13	80	13	.880 x 2.	.734 x 1.640	4′ & 6′	8′
* ¾″ No. 10	119	13	.889 x 2.	.675 x 1.563	4′	8′
* ¾″ No. 9	180	10	.857 x 2.	.600 x 1.45	4′ & 6′	8′
1″ No. 16	47	16	1.01 x 2.375	.875 x 1.937	4′	8′
1½″ No. 16	40	16	1.35 x 3.125	1.180 x 2.813	4′	8′
*1½″ No. 13	60	13	1.35 x 3.125	1.200 x 2.688	4′ & 6′	8′
*1½″ No. 10	79	13	1.33 x 3.125	1.156 x 2.64	4′ & 6	8′
*1½″ No. 9	119	10	1.33 x 3.125	1.140 x 2.531	4′ & 6′	8′

* Sizes carried in stock. Other sizes shipped from mill.

Send for Expanded Metal catalog for complete data.

EXPANDED METAL GRATING

SHIPPED FROM WARREN: OHIO



Properties	5.0# GRATING	4.0# GRATING	3.0# GRATING
Wt.—Plain......	5.0# per sq. ft.	4.0# per sq. ft.	3.0# per sq. ft
Strand Size......	.223″ x .31″	.223″ x .30″	.223″ x .232″
Diamonds.......	1.144″ x 5.0″	1.395″ x 5.0″	1.44″ x 5.0″
Diamond Openings......	.623″ x 2.875″	.937″ x 3.25″	1.063″ x 3.313″

(All Dimensions approx.)

Standard Sizes

S.W.D. (Short way of dia.)—48″ 60″ 72″
L.W.D. (Long way of dia.)—20″—25″—30″—40″—60″—120″

Special sizes on request.

When ordering grating specify sizes by giving dimensions S.W.D. x L.W.D. respectively.

LOAD TEST DATA

LOADING CONDITION

Concentrated load in lbs. per 12″ of width applied at center of span. Deflections given in inches at center span are based on tests. Ends of grating rigidly fastened to supports about 6″ on centers.

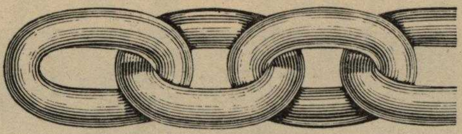
TABLE OF DEFLECTIONS

	25″ CLEAR SPAN	30″ CLEAR SPAN	35″ CLEAR SPAN	40″ CLEAR SPAN
LOAD LBS.	5.0#-4.0#-3.0#	5.0#-4.0#-3.0#	5.0#-4.0#-3.0#	5.0#-4.0#-3.0#
50	.022-.032-.049	.034-.056-.063	.059-.083	.077-.130
100	.045-.062-.098	.073-.107-.125	.118-.170	.155-.260
150	.067-.090-.148	.112-.156-.188	.180-.257	.236-.391
200	.090-.120-.197	.154-.208-.250	.244-.338	.324-.520

LONG BOND

Compared with usual designs which have a very short bond this EXPANDED METAL GRATING has an exceptionally long bond which increases the contact area as much as 5 fold thus providing a much smoother walking and trucking surface.

CHAIN



SHIPPED FROM CHICAGO

PROOF COIL - Straight Link

Trade Size	Outside Length	Outside Width	Links Foot	Weight 100 Ft.	Breaking Test	Safe Working Load
3/16	1 25/64	27/32	12 1/2	40	2,090	520
1/4	1 9/16	1 1/16	12	70	3,600	900
5/16	1 51/64	1 3/16	10 3/4	105	5,440	1,360
3/8	2 3/64	1 7/16	9 3/4	158	7,440	1,860
7/16	2 5/16	1 11/16	8 3/4	210	10,000	2,500
1/2	2 9/16	1 7/8	8	265	13,200	3,300
5/8	3 3/16	2 5/16	6 3/8	410	20,000	5,000
3/4	3 11/16	2 11/16	5 5/8	580	28,300	7,075

BBB QUALITY - Straight Link

Trade Size	Outside Length	Outside Width	Links Foot	Weight 100 Ft.	Breaking Test	Safe Working Load
3/16	1 7/32	13/16	15 1/2	43	2,600	650
1/4	1 27/64	1	14	78	4,500	1,125
5/16	1 11/16	1 3/16	12	115	6,800	1,700
3/8	1 29/32	1 7/46	11	166	9,300	2,325
7/16	2 5/32	1 5/8	9 3/4	220	12,500	3,125
1/2	2 13/32	1 13/16	9	295	16,500	4,125
5/8	3	2 3/16	7 1/8	430	25,000	6,250
3/4	3 7/16	2 9/16	6 3/8	615	35,400	8,850

SHIPPED FROM CHICAGO

SLING HOOKS

Sizes for 1/2", 5/8", 3/4", 7/8" and 1" chain

GRAB HOOKS

Sizes for 1/4", 5/16" 3/8", 7/16", 1/2", 5/8", 3/4" and 7/8" Chain

SLIP HOOKS

Sizes for 1/4", 5/16", 3/8", 7/16", 1/2", 5/8" and 3/4" Chain

ALLOY STEEL CHAINS

Where maximum tensile and resistance to abrasion is required ALLOY HEAT TREATED STEEL CHAIN is recommended. The greater tensile strength and many other advantages make Alloy Steel Chain a more economical and safer chain than wrought iron for slings.

This chain is made from accurately controlled analysis nickel alloy steel, which when heat treated has a tensile of 125,000 pounds per square inch.

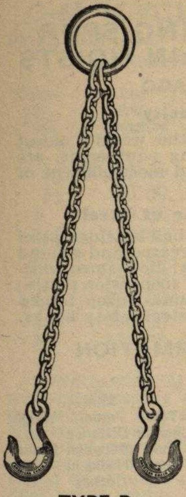
While the Alloy Steel Chains have a safe working load of more than three times the wrought iron chains, it is recommended that one size smaller than previously used in wrought iron be used in alloy, to provide a higher factor of safety.

Send for Alloy Chain Catalog.

WRITE FOR PRICES

CHAIN SLINGS

MADE TO ORDER

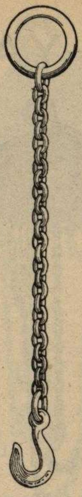

TYPE D

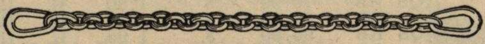
Type "D"

Double sling chain furnished with ring in center as illustrated or with pear shaped link and with sling hooks or grab hooks on each end.

Type "S"

Single sling chain with ring as illustrated or with pear shaped link on one end and with either sling or grab hook.


TYPE S


TYPE C

Type "C"

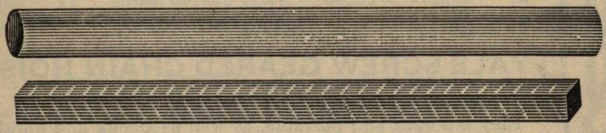
Single sling chain with pear shape links each end. Can also be furnished with rings.

Chain slings can be made of HEAT TREATED ALLOY STEEL CHAIN, and in two grades of iron chain, either single refined all puddled iron or double refined all puddled iron.

Due to its many advantages over iron, Heat Treated Alloy Steel Chain is now extensively used.

Send for data book and price list.

GENUINE SOAPSTONE CRAYONS



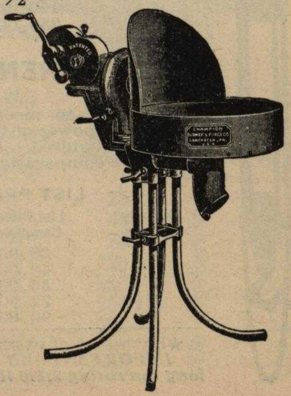
These metal marking crayons are sawed from clear, selected talc—the very best grade obtainable. They are hard, firm, free from grit and will retain sharp marking edges. This better grade costs no more than the ordinary grade. Sizes in stock:

¼″ round 5″ long, packed 1 gross in box.
¼″ square 5″ " " " " "
½″ x 3⁄16″ Flat 5″ long packed 1 gross in box.
½ x 1⁄16″ " 5″ " " 2 " " "
1¼ x 3⁄16″ " 5" " " ½ " " "

CHAMPION BALL-BEARING FORGE

No. 401

SHIPPED FROM CHICAGO



Regular and continuous positive blast.

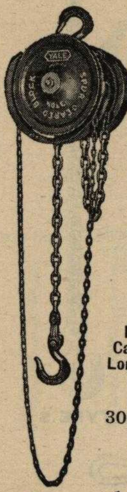
Hearth	18 in. dia.
Fan	9 in. dia.
Height	30 in.
Weight	135 lbs.

CHAIN
CHAIN HOISTS
TROLLEYS
OILER
CCESSORIES
HAND TOOLS
RIVET BOLTS
—
RIVETS
UBE
EXPANDERS &
UTTERS
BELTING
—
HOSE
SAW BLADES
MACHINERY
LOADS
—
STRUCTURAL
SECTIONS
COLOR CODE
AISI & SAE
SPECIFICA-
TIONS
AVERAGE
PHYSICAL
PROPERTIES
TOLERANCES
—
CUTTING
EXTRAS
FERENCE
BLES
TA

TRADE YALE MARK BALL BEARING SPUR GEARED CHAIN HOISTS

SHIPPED FROM CHICAGO

300 lbs. to 40 Tons Capacity



These powerful hoists, made by the world's oldest and largest manufacturers of hoisting equipment, are the safest as well as the speediest and most efficient of all hand hoists, because they are

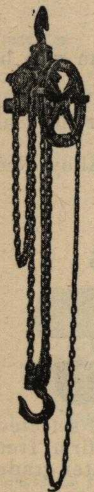
"From Hook to Hook a Line of Steel"

Heavy duty chrome vanadium steel ball bearings; steel load sheave; heavy one-piece heat treated and ground driving pinion; planetary gear systems; die-formed, electrically welded load chain; heavy steel suspension plates; adjustable continuous hand chain guides; drop forged detachable steel shackles and special steel safety hooks.

LIST PRICES AND INFORMATION

Rated Capacity, Long Tons	Model	Price Complete, Standard Lift	Travel of Lower Hook or Standard Lift, in Feet	Extra Lift Price, Per Foot	Test Load in Long Tons	Minimum Distance Between Hooks in Inches	Weight in Pounds Net
300 lbs.	BB	$ 60.00	8	$ 1.80	504 lbs	12	62
¼	BB	70.00	8	1.80	⅜	12	62
¼QS	BB	70.00	8	1.80	⅜	12	62
½	BB	70.00	8	1.80	¾	12	62
½QS	BB	90.00	8	1.90	¾	15 ½	94
1	BB	90.00	8	1.90	1 ½	15 ½	94
1 ½	BB	120.00	8	2.00	2 ¼	18	136
2	BB	140.00	9	2.10	3	21	204
3S	BS	180.00	10	2.60	4 ½	23	269
3	BB	180.00	10	3.00	4 ½	32	212
4	BB	220.00	10	3.20	6	37	301
5	BB	280.00	12	4.30	7 ½	45	413
5D	BS	280.00	12	4.20	7 ½	34	388
6	BB	330.00	12	4.30	9	45	413
6D	BS	330.00	12	4.20	9	34	388
8	BB	400.00	12	5.40	12	49	502
10	BB	480.00	12	6.50	15	54	612
12	BB	600.00	12	8.60	18	54	860
16	BB	720.00	12	10.80	24	62	1046
20	BB	850.00	12	13.00	30	62	1230
25	BB	950.00	12	13.00	37 ½	62	1250
30	BS	1700.00	12	18.00	45	64	2150
40	BS	2700.00	12	25.00	60	71	3200

S—Single Chain. D—Double Chain.



YALE SCREW GEARED CHAIN HOISTS

½ to 5 Tons Capacity

Suitable for horizontal as well as upright service because they are light and portable, as well as strong and durable. Operate on worm wheel and screw principle and provide close headroom.

LIST PRICES AND INFORMATION

Capacity in Tons	List Price, Complete	Lift in Feet	Extra Lift, Price per Ft.	Net Weight in Lbs.
½	50.00	8	2.50	46
1	60.00	8	2.60	60
1½	80.00	8	2.70	82
2	100.00	9	2.80	105
3	150.00	10	3.00	188
4	190.00	10	3.80	221
5	280.00	12	4.00	301

DIFFERENTIAL CHAIN HOISTS

¼ to 2 Tons Capacity

Designed to meet ordinary hoisting needs where the speed and power of the spur geared and screw geared types are not required. Especially suitable for service where loads are comparatively light.

LIST PRICES AND INFORMATION

Capacity in Tons	List Price, Complete	Lift in Feet	Extra Lift, Price per Ft.★	Net Weight in Lbs.
¼	36.00	6	4.80	23
½	42.00	7	4.80	30
1	56.00	8	5.00	50
1½	72.00	8½	5.40	81
2	90.00	9	5.60	121

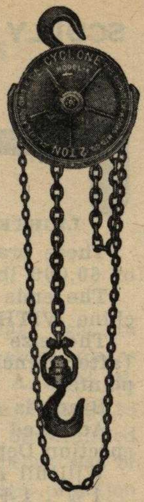
★Each foot of extra lift includes 4 feet of chain.

IMPORTANT—All Yale Hoists are tested to 50% overload—long ton rating 2,240 lbs.

C-M "CYCLONE" CHAIN HOIST

BALL BEARING - HIGH SPEED - SPUR GEARED

SHIPPED FROM CHICAGO



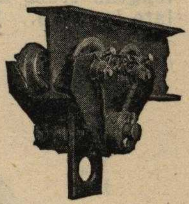
Capacity, Tons	List Price Complete	Height of Lift, Ft.	Ex. Chain per foot of Lift, List	Gross Wt. Boxed, Lbs.	Ft. of Chain to Lift Load One Foot, Ft.
¼	$ 70.00	8	$ 1.80	69	12½
½	70.00	8	1.80	69	24
1	90.00	8	1.90	106	32
1½	120.00	8	2.00	174	37
2	140.00	9	2.10	190	47
3	180.00	10	2.60	240	70
4	220.00	10	3.20	280	94
5	280.00	12	4.20	358	120
6	330.00	12	4.20	415	140

"CYCLONE" Model K (¼ to 6 ton inclusive) has an average efficiency of 90%. Equipped with eight ball bearings and four self-retaining roller bearings. High efficiency insures very fast speed, easy operation and minimum wear. All cut gears. Exclusive gyrating yokes feature guarantees safety and smooth operation. Internal mechanism operates in grease bath in oil-tight, dust proof frame. Special alloy lift wheel and gears provide for long service.

WRITE FOR DISCOUNTS

"MOORE" BALL BEARING TROLLEY

SHIPPED FROM CHICAGO



Forged steel. Pressed Steel Wheel with built in Ball Bearings, Alemite fitting provide for proper lubrication.

Capacity Tons	List Price	Adjustable for Standard I-Beams	Tread Diameter of Wheels	Net Weight
¼	$12.00	3 to 7 in. inc.	2⅛	15 lbs.
½	14.00	3 to 7 in. inc.	2⅛	18 lbs.
1	16.00	4 to 8 in. inc.	3⅛	28 lbs.
1½	28.00	6 to 10 in. inc.	4¾	50 lbs.
2	36.00	6 to 10 in. inc.	4¾	50 lbs.

WRITE FOR DISCOUNTS

IDEAL STEEL PLATE TROLLEYS

SHIPPED FROM CHICAGO

PLAIN

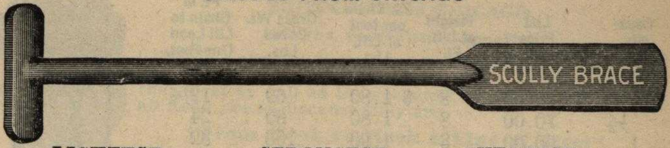
GEARED

Capacity in Tons	Standard Size Light I-Beams to which Trolleys are Adjustable, Inches	Diam. Tread of Wheel, Inches	PLAIN: Price with Hyatt Roller Bearings	PLAIN: Price with Plain Bearings	PLAIN: Weight Pounds	GEARED: Price with Hyatt Roller Bearings	GEARED: Weight Pounds
½	4, 5, 6 and 7	3¼	On Application	On Application	25	On Applicatian	......
1	5, 6, 7 and 8	4¼			46		65
2	6, 7, 8 and 9	5¼			75		100
3	8, 9, 10 and 12	7¼			120		160
4	10, 12 and 15	9⅛			190		240
5	12, 15 and 18	11			250		290
6	15, 18 and 20	11			270		330
8	18, 20 and 24	11¾			480		540
10	20 and 24	12¾			525		700

BOILER ACCESSORIES
HAND TOOLS
RIVET BOLTS — RIVETS
TUBE EXPANDERS & CUTTERS
BELTING — HOSE
SAW BLADES
MACHINERY
LOADS — STRUCTURAL SECTIONS
COLOR CODE
AISI & SAE SPECIFICATIONS
AVERAGE PHYSICAL PROPERTIES
TOLERANCES — CUTTING EXTRAS
EFERENCE ABLES ATA

SCULLY WELDLESS STEEL BOILER BRACE

SHIPPED FROM CHICAGO



LIGHTEST STRONGEST CHEAPEST

These braces are forged from selected open-hearth steel of 60,000 lbs. tensile strength.

The ends are upset and formed in a heavy forging machine WITHOUT WELDS.

The size of both ends are so designed that the area (after punching out holes), is practically the same at all points.

Brace is easily fitted and will gather little scale.

Accepted by Insurance Companies and State Boiler Inspection Departments.

Will fill A. S. M. E. Requirements.

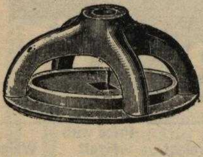
1⅛", 1 3/16" and 1¼" diameters are standard. 1⅛" and 1¼" diameter carried in lengths up to 72" incl. Longer lengths from mill. 1 3/16" diameter will not be made until late in 1946. 1½" diameter from mill only.

DIMENSIONS OF BRACES

Diameter of Body	Size of Shell End	Size of Body End
1⅛"	8½"x3 5/16"x9/16"	6½"x2⅝"x½"
1 3/16"	8½"x3 5/16"x11/16"	6½"x2⅝"x9/16"
1¼"	8½"x3 5/16"x11/16"	6½"x2⅝"x11/16"
1½"	8½"x3¾"x15/16"	7¼"x3 "x¾"

WEIGHT OF BRACES

Length	1⅛" Diameter	1 3/16" Diameter	1¼" Diameter	1½" Diameter
24"	11 Lbs.	11½ Lbs.	13½ Lbs.	20 Lbs.
30"	12½ Lbs.	14 Lbs.	15 Lbs.	23 Lbs.
36"	14½ Lbs.	16 Lbs.	18 Lbs.	26 Lbs.
42"	16 Lbs.	18 Lbs.	19½ Lbs.	29 Lbs.
48"	17½ Lbs.	20 Lbs.	22 Lbs.	32 Lbs.
54"	19½ Lbs.	22 Lbs.	24 Lbs.	35 Lbs.
60"	21 Lbs.	24 Lbs.	26 Lbs.	38 Lbs.
66"	22 Lbs.	25½ Lbs.	28 Lbs.	41 Lbs.
72"	23½ Lbs.	27 Lbs.	30 Lbs.	44 Lbs.
78"	26 Lbs.	30 Lbs.	32 Lbs.	47 Lbs.
84"	27½ Lbs.	31 Lbs.	34 Lbs.	51 Lbs.
90"	30 Lbs.	32½ Lbs.	35 Lbs.	53 Lbs.
96"	32 Lbs.	35 Lbs.	38½ Lbs.	56 Lbs.
102"	34½ Lbs.	37½ Lbs.	40 Lbs.	59 Lbs.
108"	36½ Lbs.	39 Lbs.	42 Lbs.	62 Lbs.



HAND HOLES, CAST IRON

SHIPPED FROM CHICAGO

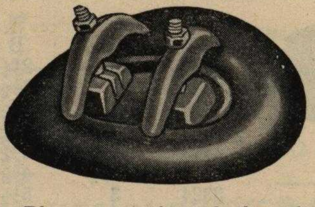
Cast iron cover plate with bolt and crab only. Specify whether flat or curved. If curved, specify which dimension curved.

Size	Approximate Weight Pounds	Size	Approximate Weight Pounds
2 x 3	6	3½ x 5½	14
2½ x 3½	7	4 x 5	14
3 x 4	8	4 x 6	16
3 x 4½	9	5 x 6½	19
3½ x 4½	10	5 x 7	24
3 x 5	11	6 x 8	27
3 x 5½	11	6 x 9	40
3½ x 5	11		

WRITE FOR PRICES

MANHOLE SADDLE PLATES

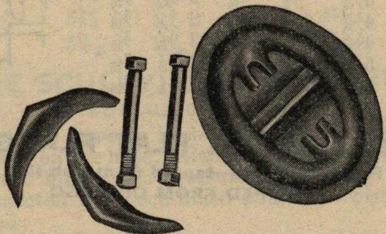
SHIPPED FROM CHICAGO



Manhole Saddle Plates are furnished either flat, bent to fit curved shells or for dished heads. Our standard saddle plates are made of ⅝″ thickness. When required to meet A. S. M. E. Code, a steel band can be shrunk around the outside of flange to give sufficient gasket bearing surface. Saddles can be furnished in any thickness from ⅜″ to 1¾″. When ordering specify size of opening (10″x16″, 11″x15″, 12″x16″), thickness of plate, direction of opening, whether for single or double row of rivets or for welding, and if wanted with or without steel band.

SCULLY PRESSED STEEL MANHEADS

SHIPPED FROM CHICAGO

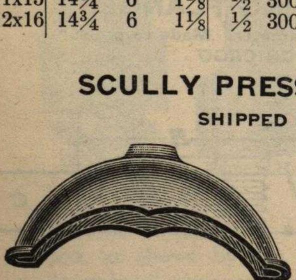


These manheads are made of A. S. M. E. Spec. SA-70 flange steel. They are so dished and shaped that maximum strength is obtained. The bolts are standard machine bolts. The handle greatly simplifies installation and removal.

Elliptical Size	YOKES			COVERS		Shipping Weight	BOLTS	GASKETS	
	Spread	Height	Size Bolt Hole	Thickness	Working Pressure	1—Cover 2—Yokes 2—Bolts 1—Gasket	Diameter	Material	Thickness
10x16	12¼	4½	1⅛	½	300lb	50	1	Asbestos	¼
11x15	14¾	6	1⅛	½	300lb	50	1	Asbestos	¼
12x16	14¾	6	1⅛	½	300lb	65	1	Asbestos	¼

SCULLY PRESSED STEEL CRABS

SHIPPED FROM CHICAGO



Pressed from steel plates. Suitable for 10″ x 16″ and 11″ x 15″ manheads.

Size No. 2 measures 14½″ from tip to tip.

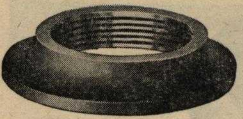
WRITE FOR PRICES

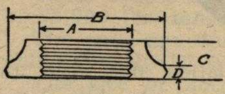
BOILER ACCESSORIES
HAND TOOLS
RIVET BOLTS — RIVETS
TUBE EXPANDERS & CUTTERS
BELTING — HOSE
SAW BLADES
MACHINERY
LOADS — STRUCTURAL SECTIONS
COLOR CODE
AISI & SAE SPECIFICATIONS
AVERAGE PHYSICAL PROPERTIES
TOLERANCES — CUTTING EXTRAS
EFERENCE ABLES ATA

SCULLY WELDING FLANGES

DROP FORGED STEEL

EXTRA HEAVY FLAT FLANGES

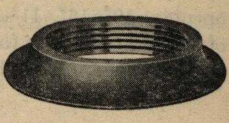


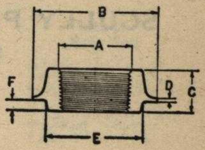


No.	A	B	C	D
3306	¾	2¼	¾	¼
3308	1	2½	¾	¼
3310	1¼	2 15/16	¾	¼
3312	1½	3¼	¾	¼
3316	2	3¾	¾	¼
3320	2½	4 5/16	1	¼
3324	3	5½	1	¼
3328	3½	5 15/16	1	¼
3332	4	6½	1⅛	¼

STANDARD HEAVY FLAT FLANGES

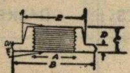
No.	A	B	C	D	E	F
3001	⅛	1½	13/32	3/64	1 5/32	3/32
3002	¼	1½	13/32	3/64	1 5/32	3/32
3003	⅜	1½	13/32	3/64	1 5/32	3/32
3004	½	1⅞	9/16	3/64	1 ¼	3/32
3006	¾	2	⅝	1/16	1 9/32	3/32
3008	1	2¼	¾	1/16	1 ¾	3/16
3010	1¼	2 11/16	¾	1/16	1 ⅞	3/16
3012	1½	3 3/64	¾	1/16	2 11/32	3/16
3016	2	3½	¾	1/16	2 23/32	3/16
3020	2½	4 1/16	1	1/16	3 3/16	3/16
3024	3	4⅝	1	1/16	3 11/16	3/16
3028	3½	5⅛	1	1/16	4 3/16	3/16
3032	4	5 13/16	1⅛	1/16	4 ¾	3/16





HEAVY TANK FLAT FLANGES

Regular tapping—tapped from hub side.
SHIPPED FROM CHICAGO

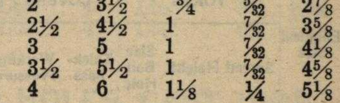


No.	A	B	C	D	E
3202	¼	1¼	5/16	⅛	¾
3203	⅜	1¼	5/16	⅛	15/16
3204	½	1½	7/16	⅛	1⅛
3206	¾	1¾	⅝	⅛	1⅜
3208	1	2⅛	⅝	5/32	1 11/16
3210	1¼	2½	¾	5/32	2
3212	1½	3	¾	5/32	2⅜
3216	2	3½	¾	5/32	2⅞
3220	2½	4½	1	7/32	3⅝
3224	3	5	1	7/32	4⅛
3228	3½	5½	1	7/32	4⅝
3232	4	6	1⅛	¼	5⅛

LARGE SIZE WELDING FLANGES

Either flat or curved to any diameter. Made to order.
SHIPPED FROM CHICAGO

Size A	B	C	D
5	7½	1½	½
6	8½	1½	½
8	10½	1¾	⅝
10	13	2	¾
12	15	2	13/16



Our Extra Heavy, Standard Heavy and Heavy Tank Welding Flanges Comply with Underwriters Specifications.

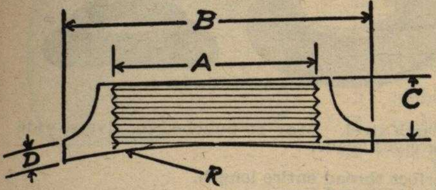
WRITE FOR PRICES

SCULLY WELDING FLANGES

Drop Forged Steel

EXTRA HEAVY CURVED FLANGES

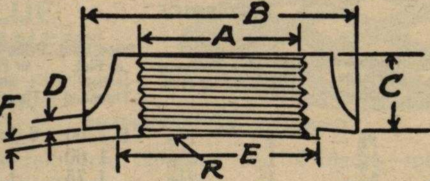
SHIPPED FROM CHICAGO



No.	A	B	C	D	R
3520	2½	4⁵⁄₁₆	1	¼	30
3524	3	5	1	¼	30
3528	3½	5⅝	1	¼	30
3532	4	6	1⅛	¼	30

STANDARD HEAVY CURVED FLANGES

SHIPPED FROM CHICAGO



No.	A	B	C	D	E	F	R
3112 A	1½	3⅛	¾	¹⁄₁₆	2¹¹⁄₃₂	⅜	12
3116 A	2	3¹⁹⁄₃₂	¹³⁄₁₆	¹⁄₁₆	2²³⁄₃₂	⅜	15
3120 A	2½	4⅜	1	¹⁄₁₆	3¹⁄₁₆	⁵⁄₁₆	22
3124 A	3	4⅞	1	¹⁄₁₆	3¹¹⁄₁₆	⁵⁄₁₆	22
3128 A	3½	5⅛	1	¹⁄₁₆	4³⁄₁₆	⁵⁄₁₆	26
3132 A	4	5¹³⁄₁₆	1³⁄₁₆	¹⁄₁₆	4¾	⁹⁄₁₆	22

THE SCULLY HOSE COUPLING

FOR AIR OR WATER

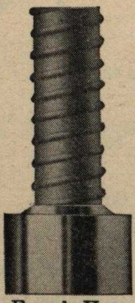
Never allows the hose to become twisted or kinked, reducing the wear and tear on the hose. Cannot itself become disconnected. Never leaks; the higher the pressure the tighter the joint. Instantly disconnected by a combined pull and twist of the sleeve on the male end.

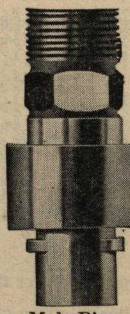
It swivels freely under the highest pressure, allowing the screwing in of connected nipples without disconnecting hose.

Made in the following sizes: ¼ in., ⅜ in., ⁷⁄₁₆ in., ½ in., ¾ in., pipe and hose ends, which are interchangeable with each other. When ordering, designate size, indicating if hose or pipe and whether male or female ends are wanted.

SHIPPED FROM CHICAGO

Male Hose


Female Hose


Male Pipe

Female Pipe

The joint is made by a rubber gasket, U shaped, as shown by the cut: This is very easily replaced when worn out, and is so held in place that it never blows out.

HAND TOOLS
RIVET BOLTS — RIVETS
TUBE EXPANDERS & CUTTERS
BELTING — HOSE
SAW BLADES
MACHINERY
LOADS — STRUCTURAL SECTIONS
COLOR CODE
AISI & SAE SPECIFICATIONS
AVERAGE PHYSICAL PROPERTIES
TOLERANCES — CUTTING EXTRAS
EFERENCE ABLES ATA

FORGED STEEL BOILER FLANGES

SHIPPED FROM CHICAGO

Forged from soft open-hearth steel. May be punched for rivets, wide face making ample space for rivet heads.

Edges beveled for calking.

Heavy, deep hub with perfect thread entire length.

Tested with Briggs Standard Thread Gage.

For use on boilers and pressure tanks, steam pressure up to 125 lbs. per square inch.

LIST PRICE

Size of Pipe, Inches	Diameter of Flange, Inches	Thickness of Flange, Inches	Depth of Hub, Inches	Diameter of Hub	Price, Bent or Flat, not Threaded	Price Bent or Flat, and Threaded	Approximate Weight, Each
¾	6	5/16	1	1⅞	$ 1.60	$ 1.70	3
1	6	5/16	1	2 1/16	1.60	1.80	3
1¼	6½	5/16	1	2½	1.75	1.95	5
1½	7	⅜	1¼	2 13/16	2.05	2.25	5
2	8	⅜	1¼	3 5/16	2.35	2.50	6
2½	8½	⅜	1½	3⅞	2.45	2.60	6½
3	9	⅜	1½	4⅝	2.65	2.80	8
3½	9½	7/16	1½	5	3.00	3.20	9
4	10	7/16	1¾	5 9/16	3.35	3.50	10
5	11½	½	2	6 11/16	4.75	5.00	18
6	12½	½	2	7¾	5.70	6.00	20
8	15	⅝	2½	9⅞	11.40	12.00	22
10	17½	¾	2½	12 3/16	21.00	25.00	44
12	20	13/16	3	14⅝	26.00	30.00	60

FORGED STEEL MARINE FLANGES

For high pressure up to 250 lbs. per square inch.

SHIPPED FROM CHICAGO

Size in Inches	Outside Diameter	Thickness	Depth of Hub	Approximate Weight, Each	Price Bent or Flat Plain	Price Bent or Flat, Threaded
¾	6	7/16	1⅛	4	$2.00	$2.10
1	6	7/16	1⅛	4	2.10	2.20
1¼	6½	7/16	1¼	5	2.18	2.30
1½	7	½	1⅜	6	2.28	2.40
2	8	½	1½	9	2.35	2.50
2½	8½	½	1⅝	10	2.45	2.60
3	9	9/16	1⅝	12	2.65	2.80
3½	9½	9/16	1¾	14	3.00	3.20
4	11	9/16	2¼	21	3.35	3.50
5	12½	¾	2¾	38	4.75	5.00
6	13½	¾	3	40	5.70	6.00

Above list prices apply to either flat flanges or flanges bent to standard circles.

Flanges 6″ and smaller, bent to circles smaller than 18″ but not under 14″—50% extra.

Flanges 6″ and smaller, bent to circles under 14″—Special Charge.

Flanges 8″ and larger, bent to circles smaller than 24″—Special Charge.

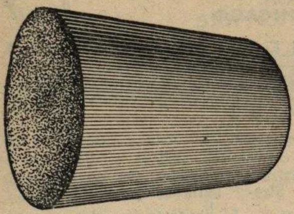
Flanges threaded straight through—15% extra.

Flanges bent to fit center dished heads or spherical surfaces— 10% extra.

Flanges larger O. D. than standard—Special Charge.

WRITE FOR DISCOUNTS

GREY IRON FLUE PLUGS



SHIPPED FROM CHICAGO

To be used for plugging flues in an emergency in low pressure boilers.

For Flues	List Price, Each
2 inches	$0.40
3 inches	.60
4 inches	1.00

PERFECTION FLUE CLEANERS

For flues, pipes and condenser tubes.

SHIPPED FROM CHICAGO

Spring clips re-inforce the front end of blades—insuring longer life and greater efficiency.

The cleaner is light, strong and simple, and the knives are so made that they are always sharp. Heads are steel drop forgings.

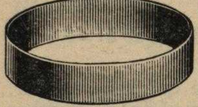
Will clean welded flues as nicely as old ones, and remove the scales from tube without cutting the metal.

Cleans hot or cold flues without changing the temper.

It has no screws nor rivets in its construction, and yet is the strongest cleaner made.

Size, Inches	List Price	Size, Inches	List Price	Size, Inches	List Price
1¼ Flue	$2.00	2½ Flue	$2.50	4 Flue	$4.00
1½ "	2.00	2¾ "	2.75	1 Pipe	2.00
1¾ "	2.00	3 "	3.00	1¼ "	2.00
2 "	2.00	3¼ "	3.25	1½ "	2.00
2¼ "	2.25	3½ "	3.50	2 "	2.25

Plain



SEAMLESS COPPER FERRULES

SHIPPED FROM CHICAGO

Inside Diameter in Inches	Width in Inches	1-16 Inch THICK		1-32 Inch THICK	
		List Price per 100	Weight, Lbs., per 100	List Price per 100	Weight, Lbs., per 100
1½	⅝	$17.00	6.19	$ 9.30	3.03
1¾	⅝	20.25	7.18	10.80	3.53
1⅞	⅝	21.50	7.68	....	....
2	⅝	23.00	8.18	12.30	4.02
2¼	⅝	25.25	9.17	13.50	4.52
2½	⅝	28.25	10.16	15.00	5.02
3	¾	41.00	14.57	21.90	7.21
3½	¾	45.75	16.95	24.60	8.40
4	¾	63.00	19.28	33.60	9.54
Outside Diam. 2	⅝	21.50	7.68	12.30	3.76

WRITE FOR DISCOUNTS

HAND TOOLS
RIVET BOLTS — RIVETS
TUBE EXPANDERS & CUTTERS
BELTING — HOSE
SAW BLADES
MACHINERY
LOADS — STRUCTURAL SECTIONS
COLOR CODE
AISI & SAE SPECIFICATIONS
AVERAGE PHYSICAL PROPERTIES
TOLERANCES — CUTTING EXTRAS
FERENCE
BLES
TA

SOLID STAYBOLT STEEL BARS

SHIPPED FROM CHICAGO

A. S. T. M. Specification A-31-40 and A. S. M. E. Specification SA-31 Grade A

Tensile strength 45,000 to 55,000 lbs. p. s. i. Used for commercial steel staybolts.

In 16 to 18 ft. Lengths

Diameter in Inches	Est. Wt. per Foot	Extra for Size	Diameter in Inches	Est. Wt. per Foot	Extra for Size	Diameter in Inches	Est. Wt. per Foot	Extra for Size
¾	1.50	Base	1 1/16	3.01	Base	1 ¼	4.17	Base
⅞	2.04	Base	1 ⅛	3.38	Base	1 ⅜	5.05	Base
15/16	2.35	Base	1 3/16	3.77	Base	1 ½	6.01	Base
1	2.67	Base						

SCULLY HOLLOW STAYBOLT IRON

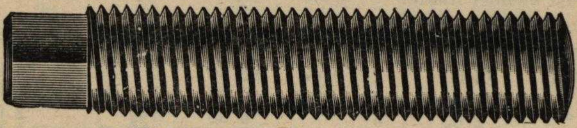
Highest grade staybolt iron hollow bars, having the hole rolled in the bar during process of manufacture. Meets A. S. T. M. Specification A-86 and A. A. R. Specification M-304—latest revision.

12 to 16 ft. Random Lengths

Diameter in Inches	Est. Weight per Foot	Diameter in Inches	Est. Weight per Foot	Diameter in Inches	Est. Weight per Foot
⅞	2.028	1 1/16	2.985	1 ¼	4.137
15/16	2.327	1 ⅛	3.348	1 ⅜	5.000
1	2.646	1 3/16	3.730	1 ½	5.958

SCULLY BOILER STAYBOLTS—SOLID

SHIPPED FROM CHICAGO



Made from U. S. S. Staybolt Steel.

Carried in stock 12 V thread, in 36″ lengths. This length is overall and includes the square head which is 1″ long.

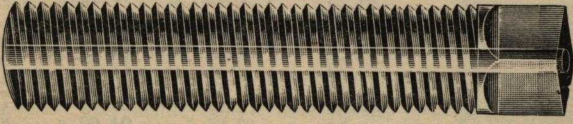
STOCK SIZES	Diameter of Staybolts in Inches								
	¾	⅞	15/16	1	1 1/16	1⅛	1¼	1⅜	1½
List price per foot	60c	80c	$1.00	$1.00	$1.30	$1.30	$1.50	$1.80	$2.00

Lengths other than stock lengths can be made quickly to order. When ordering specify length of thread (exclusive of head), number of threads per inch and whether V. or U. S. S. thread. Telltale holes can be drilled if desired.

WRITE FOR DISCOUNTS

SCULLY BOILER STAYBOLTS—HOLLOW

SHIPPED FROM CHICAGO



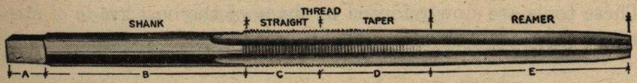
36″ overall lengths 12 V thread carried in Chicago stock in ⅞″, 15/16″, 1″, 1 1/16″, 1⅛″, 1 3/16″ and 1¼″ diameters. Other lengths made quickly to order. When ordering specify length of thread (exclusive of head) number of threads per inch and whether V or U.S.S. thread. 12 V thread furnished unless otherwise specified.

WRITE FOR PRICES

STAY BOLT TAPS

Straight Fluted

SHIPPED FROM CHICAGO



Dia., Inches	Length Inches	List Price	Dia., Inches	Length Inches	List Price	Dia., Inches	Length Inches	List Price
¾	20	8.00	15/16	24	12.00	1⅛	20	13.00
¾	24	9.60	1	20	11.00	1⅛	24	15.60
⅞	20	9.00	1	24	13.20	1 3/16	20	14.00
⅞	24	10.80	1 1/16	20	12.00	1 3/16	24	16.80
15/16	20	10.00	1 1/16	24	14.40	1¼	24	18.00

N. B.—All stock taps are divided into equal thirds, that is, ⅓ shank, ⅓ thread and ⅓ reamer. 12 V. thread.

Other lengths, larger diameters. 12 U. S. S., 10 V or 10 U. S. S. thread shipped promptly from factory.

WRITE FOR DISCOUNTS

REVERSIBLE RATCHET WRENCH

SHIPPED FROM CHICAGO

This wrench is very satisfactory for use with self-feeding expanders, also for staybolts, nuts, etc.

It can be changed to a right or left hand motion at will by rotating the knurled nut at end of the handle.

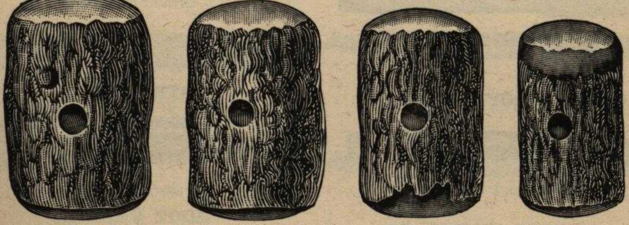
No. 3 carried in Chicago Stock, other sizes from factory.

No.	3	3½	4	4½
Length of Handle	15″	18″	18″	24″
Square Sockets	¾″ & 1″	¾″ & 1″	¾″ & 1″	1″ & 1½″
Weight Each	4½#	5#	9#	10½#
Price with One Socket	$9.00	$10.00	$12.00	$14.00
Extra Sockets, each	1.50	1.50	2.00	2.00

WRITE FOR DISCOUNTS

BARK COVERED MAULS

SHIPPED FROM CHICAGO



Made of Special Selected Grub Hickory.

Diameter Length	Approx. Wt., lbs.	Price Each	Diameter Length	Approx. Wt., lbs.	Price Each
3 in. x 6 in.	2	$0.40	5 in. x 10 in.	8	$1.10
3½ in. x 7 in.	3	.50	6 in. x 10 in.	10	1.30
4 in. x 8 in.	3½	.70	6 in. x 12 in.	11	1.40
4½ in. x 9 in.	5	.90	7 in. x 11 in.	12	1.50
			8 in. x 12 in.	19	1.75

WRITE FOR DISCOUNTS

HAND TOOLS
RIVET BOLTS — RIVETS
TUBE EXPANDERS & CUTTERS
BELTING — HOSE
SAW BLADES
MACHINERY
LOADS — STRUCTURAL SECTIONS
COLOR CODE
AISI & SAE SPECIFICATIONS
AVERAGE PHYSICAL PROPERTIES
TOLERANCES — CUTTING EXTRAS
EFERENCE BLES
TA

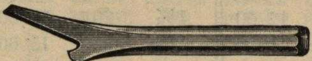
HAND TOOLS

For Boilermakers and Iron Workers

SHIPPED FROM CHICAGO

These tools are slowly forged to shape of the best grade of steels obtainable for such tools and accurately tempered.

BEADING TOOL

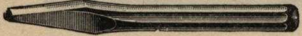


¾ in. stock about 8 in. long
⅞ " " " 8 " "

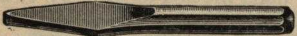
FLAT CHISEL

½ in. stock 6 in. long
⅝ " " 7 " "
¾ " " 8 " "
¾ " " 10 " "
⅞ " " 9 " "
⅞ " " 12 " "
1 " " 9 " "
1 " " 12 " "

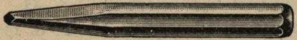
ROUND NOSE CHISEL



CAPE CHISEL

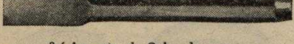


DIAMOND POINT CHISEL



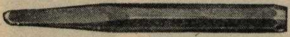
⅜ in. stock 6 in. long
½ " " 6 " "
⅝ " " 7 " "
¾ " " 8 " "
⅞ " " 9 " "
1 " " 9 " "

FLUE RIPPER



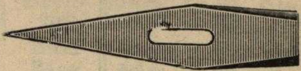
¾ in. stock 8 in. long

OYSTER KNIFE (Flue Lifter)



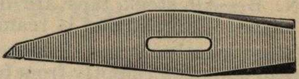
¾ in. stock 8 in. long

COLD CHISEL



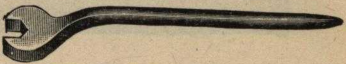
1¼ in. sq. stock 7½ in. long
1½ " " " 8 " "

SIDE SET



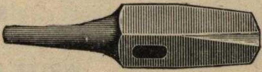
1¼ in. sq. stock 7½ in. long
1½ " " " 8 " "

BOILERMAKERS' OR STRUCTURAL WRENCH



Sizes for U. S. Standard Nuts
⅜ in. 9 in. long
$\frac{7}{16}$ " 10 " "
½ " 14 " "
⅝ " 17 " "
¾ " 19 " "
⅞ " 21 " "
1 " 23 " "

BACKING OUT PUNCH

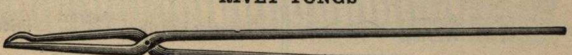


⅜ Rivet Size
½ " "
⅝ " "
¾ " "
⅞ " "
1 " "

CENTER PUNCH

¾ in. stock 6 in. long

RIVET TONGS



12 in. pickup..24 in. heater
18 " " ....30 " "

WRITE FOR PRICES

HAND TOOLS

For Boilermakers and Iron Workers

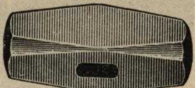
SHIPPED FROM CHICAGO

DRIFT PINS

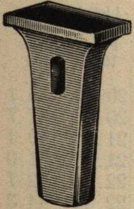
Barrel Type (as illustrated) 6 in. long
Plug Type (single end) 6 " "

7/16 in. rivet size
9/16 " " "
11/16 " " "
13/16 in. rivet size
15/16 " " "

FLOGGING HAMMER



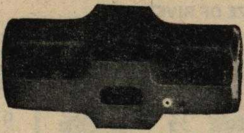
Weight 2½ lbs.
" 4 "
" 5 "
" 6 "
" 7 "
" 8 "
" 10 "



FLATTER

3 in. Square Face
4 " " "

DOUBLE FACE SLEDGE



Weight 5 lbs.
" 6 "
" 7 "
" 8 "
" 10 "
" 12 "

PNEUMATIC TOOLS

These tools are furnished with either standard round shank or standard hexagon shank except the Beading Tool which is furnished with round shank only

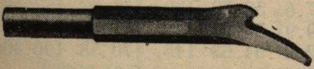
CHISEL BLANK

Round Shank

Hexagon Shank

¾ in. stock 8½ in. long
⅞ " " 8½ " "

BEADING TOOL



¾ in. stock about 9 in. long
⅞ " " " 9 " "

FLAT CHISEL

ROUND NOSE CHISEL

DIAMOND POINT CHISEL

CAPE CHISEL

CAULKING TOOL

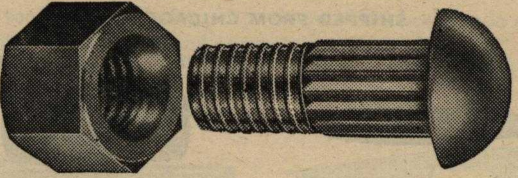
¾ in. stock 9 in. long
⅞ " " 9 " "

WRITE FOR PRICES

HAND TOOLS
RIVET BOLTS — RIVETS
TUBE EXPANDERS & CUTTERS
BELTING — HOSE
SAW BLADES
MACHINERY
LOADS — STRUCTURAL SECTIONS
COLOR CODE
AISI & SAE SPECIFICATIONS
AVERAGE PHYSICAL PROPERTIES
TOLERANCES — CUTTING EXTRAS
EFERENCE BLES
TA

DARDELET RIVET BOLTS

WITH A. B. A. STANDARD BUTTON HEADS AND HEX. NUTS



The Dardelet "RIVET-BOLT" is an improved fastening for structural work which has heretofore called for rivets or fitted bolts. Made of high-tensile steel, installed with hand hammer and wrench, it produces a stronger, stiffer, and more economical joint.

RIVET BOLT DIAM.			3/8" 12 thread		1/2" 10 thread		5/8" 8 thread	
SIZE OF RIVET HOLE			7/16"		9/16"		11/16"	
Thickness of Work	Grip No.	Grip "G"	List Prices Per 100	Est. Weight Per 100	List Prices Per 100	Est. Weight Per 100	List Prices Per 100	Est. Weight Per 100
3/8 to 1/2	1	15/32	9.63	10.6	13.73	20.4	20.33	36.1
9/16 to 11/16	2	21/32	9.83	11.0	14.20	21.4	20.83	37.7
3/4 to 7/8	3	27/32	10.03	11.4	14.63	22.5	21.33	39.4
15/16 to 1 1/16	4	1 1/32	10.23	11.8	15.10	23.5	21.83	41.0
1 1/8 to 1 1/4	5	1 7/32	10.43	12.2	15.57	24.6	22.33	42.7
1 5/16 to 1 7/16	6	1 13/32	10.63	12.6	16.00	26.2	22.83	44.3
1 1/2 to 1 5/8	7	1 19/32	10.83	13.4	16.47	27.2	23.33	45.9
1 11/16 to 1 13/16	8	1 25/32	......	......	16.90	28.3	23.80	47.6
1 7/8 to 2	9	1 31/32	......	......	17.37	28.9	24.30	49.3
2 1/16 to 2 3/16	10	2 5/32	......	......	......	......	24.80	50.9
2 1/4 to 2 3/8	11	2 11/32	......	......	......	......	25.30	52.5
2 7/16 to 2 9/16	12	2 17/32	......	......	......	......	25.80	54.6

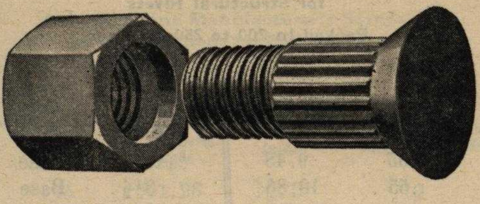
RIVET BOLT DIAM.			3/4" 8 thread		7/8" 7 thread		1" 6 thread	
SIZE OF RIVET HOLE			13/16"		15/16"		1 1/16"	
Thickness of Work	Grip No.	Grip "G"	List Prices Per 100	Est. Weight Per 100	List Prices Per 100	Est. Weight Per 100	List Prices Per 100	Est. Weight Per 100
3/8 to 1/2	1	15/32	27.47	58.0	36.57	88.	51.53	125.30
9/16 to 11/16	2	21/32	28.03	60.3	37.50	91.	52.53	129.00
3/4 to 7/8	3	27/32	28.57	62.6	38.47	94.	53.53	132.70
15/16 to 1 1/16	4	1 1/32	29.17	64.9	39.40	97.	54.53	136.40
1 1/8 to 1 1/4	5	1 7/32	29.67	67.2	40.37	100.	55.53	138.75
1 5/16 to 1 7/16	6	1 13/32	30.30	69.5	41.33	103.	56.53	142.50
1 1/2 to 1 5/8	7	1 19/32	30.77	71.8	42.27	106.	57.53	146.25
1 11/16 to 1 13/16	8	1 25/32	31.33	74.1	43.23	109.	58.53	150.00
1 7/8 to 2	9	1 31/32	31.90	76.4	44.17	112.	59.53	153.75
2 1/16 to 2 3/16	10	2 5/32	32.47	78.6	45.13	115.	60.53	157.50
2 1/4 to 2 3/8	11	2 11/32	33.00	80.9	46.07	118.	61.53	161.25
2 7/16 to 2 9/16	12	2 17/32	33.57	83.1	47.03	121.	62.53	165.00
2 5/8 to 2 3/4	13	2 23/32	34.13	85.4	47.97	124.	63.53	168.75
2 13/16 to 2 15/16	14	2 29/32	34.73	87.6	48.93	127.	64.53	172.50
3 to 3 1/8	15	3 3/32	35.33	90.7	49.90	130.	65.53	177.70
3 3/16 to 3 5/16	16	3 9/32	35.93	93.0	50.83	133.	66.53	180.00
3 3/8 to 3 1/2	17	3 15/32	36.53	95.3	51.80	136.	67.53	185.20
3 9/16 to 3 11/16	18	3 21/32	37.13	97.6	52.73	139.	68.53	187.50
3 3/4 to 3 7/8	19	3 27/32	37.73	99.9	53.70	142.	69.53	191.25
3 15/16 to 4 1/16	20	4 1/32	38.33	102.2	54.63	145.	70.53	196.40

RIVET BOLT DIAM.	3/8"	1/2"	5/8"	3/4"	7/8"	1"
O. D. of Ribs	29/64	37/64	45/64	53/64	61/64	1 5/64
Length of Thread	21/32	25/32	29/32	1 1/32	1 7/32	1 11/32
Thickness of Nut	9/16	11/16	13/16	15/16	1 1/8	1 1/4
Across Flats on Nuts	11/16	7/8	1 1/16	1 1/4	1 7/16	1 5/8

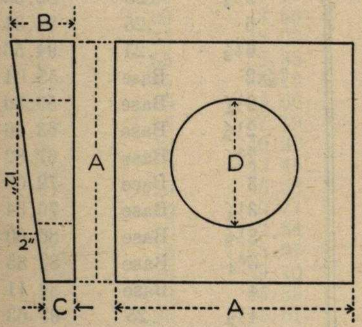
WE CAN ALSO SUPPLY

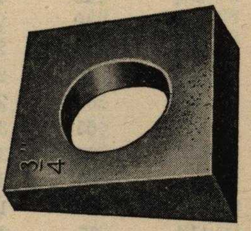
DARDELET RIVET BOLTS

WITH A. B. A. STANDARD COUNTERSUNK HEADS AND HEX. NUTS



MALLEABLE BEVEL WASHERS

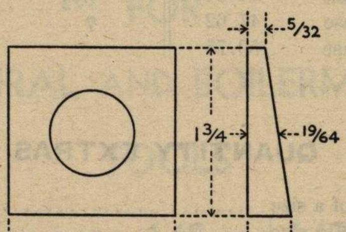




Light, strong and will not break. Beveled 2" in 12" which is standard for flanges of Beams and Channels.

Diameter of Bolt	Approx. Wt. Lbs. per 100 pcs.	A	B	C	D
3/8 Inch	9.95	1 1/4"	11/32"	5/32"	7/16"
1/2 Inch	9.25	1 1/4"	11/32"	5/32"	9/16"
5/8 Inch	14.99	1 1/2"	13/32"	5/32"	11/16"
3/4 Inch	16.37	1 1/2"	15/32"	7/32"	13/16"
7/8 Inch	36.71	2"	9/16"	7/32"	15/16"
1 Inch	33.96	2"	9/16"	7/32"	1 3/32"

ROLLED STEEL BEVELED WASHERS



These washers have a slope of 2" in 12" and are intended for use on the flanges of standard beams and channels.

Washers can be furnished in any length, with holes of any size desired.

The plain section can be supplied in random lengths of 15 to 20 feet.

Theoretical weight of section, 1.77 lbs. per foot.

RIVET BOLTS — RIVETS
TUBE EXPANDERS & CUTTERS
BELTING — HOSE
SAW BLADES
MACHINERY
LOADS — STRUCTURAL SECTIONS
COLOR CODE
AISI & SAE SPECIFICATIONS
AVERAGE PHYSICAL PROPERTIES
TOLERANCES — CUTTING EXTRAS
EFERENCE
BLES
TA

SHIPPED FROM CHICAGO

ROUND HEAD RIVETS

Manufacturers Standard Specifications for Structural Rivets

Packed in 200 to 250 lb. Kegs

Size, Inches	Extra for Size	Approx. Weight per 100 Rivets, Pounds
½x1	.55	9.48
1¼	.55	10.86
1½	.55	12.26
1¾	.55	13.65
2	.40	15.04
2½	.40	17.82
2¾	.40	19.21
3	.40	20.60
3¾	.40	24.77
4	.40	26.17
4½	.65	28.95
5	.65	31.73
5½	.65	34.51
6	.65	37.29
⅝x1¼	.35	18.51
1½	.35	20.68
1¾	.35	22.85
2	.20	25.03
2¼	.20	27.20
2½	.20	29.37
3	.20	33.72
3½	.20	38.06
4	.20	42.41
4½	.45	46.76
5	.45	51.10
5½	.45	55.45
6	.45	59.80
¾x1½	.15	31.98
1¾	.15	35.11
2	Base	38.24
2¼	Base	41.37
2½	Base	44.50
2¾	Base	47.62
3	Base	50.75
¾x3¼	Base	53.88
3½	Base	57.01
3¾	Base	60.14
4	Base	63.27
4½	.25	69.53
5	.25	75.79
5½	.25	82.05
6	.25	88.31
6½	.25	94.56
⅞x2	Base	55.04
2¼	Base	59.30
2½	Base	63.56
2¾	Base	67.82
3	Base	72.08
3¼	Base	76.34
3½	Base	80.60
3¾	Base	84.85
4	Base	89.11
4½	.25	97.63
5	.25	106.15
5½	.25	114.67
6	.25	123.19
1x2½	.10	86.93
2¾	.10	92.49
3	.10	98.05
3½	.10	109.18
4	.10	120.31
4½	.35	131.43
5	.35	142.56
5½	.35	153.68
6	.35	164.81
6½	.35	175.94
7	.35	187.06

QUANTITY EXTRAS

1000# and over of a size	Base
600# to 999# of a size	add $0.20 cwt.
400# to 599# of a size	add .35 cwt.
200# to 399# of a size	add .70 cwt.
100# to 199# of a size	add 1.50 cwt.
50# to 99# of a size	add 3.00 cwt.
Under 50# of a size	add 4.00 cwt.

The above quantity extras are to be added to the net prices of the rivets.

SHIPPED FROM CHICAGO

CONE HEAD RIVETS

A. S. M. E. and Manufacturer's Standard Specifications for Boiler Rivets

Packed in 200 to 250 lb. Kegs

Size, Inches	Extra for Size	Approx. Weight per 100 Rivets, Pounds	Size, Inches	Extra for Size	Approx. Weight per 100 Rivets, Pounds
⅝x1½	.45	21.96	⅞x2	.10	58.21
2	.30	26.30	2¼	.10	62.47
2¼	.30	28.48	2½	.10	66.72
2½	.30	30.65	2¾	.10	70.98
2¾	.30	32.82	3	.10	75.24
3	.30	34.99	3¼	.10	79.50
3¼	.30	37.17	3½	.10	83.76
4	.30	43.69	4	.10	92.28
4½	.55	48.03	4½	.35	100.80
5	.55	52.38	5	.35	109.32
5½	.55	56.73	6	.35	126.36
¾x1½	.25	34.06	6½	.35	134.87
1¾	.25	37.19	7	.35	143.39
2	.10	40.32	8	.35	160.43
2¼	.10	43.45	1x2¼	.20	86.30
2½	.10	46.58	2½	.20	91.86
2¾	.10	49.71	2¾	.20	97.43
3	.10	52.84	3	.20	102.99
3¼	.10	55.97	3¼	.20	108.55
3½	.10	59.10	3½	.20	114.12
4	.10	65.35	4	.20	125.24
4½	.35	71.61	4½	.45	136.37
5	.35	77.87	5	.45	147.50
5½	.35	84.13	6	.45	169.75
6	.35	90.39			

For quantity extras see page 152

FOR

STRUCTURAL AND BOILERMAKERS'

TOOLS

See pages 148 and 149

TUBE EXPANDERS & CUTTERS
BELTING — HOSE
SAW BLADES
MACHINERY
LOADS — STRUCTURAL SECTIONS
COLOR CODE
AISI & SAE SPECIFICATIONS
AVERAGE PHYSICAL PROPERTIES
TOLERANCES — CUTTING EXTRAS
EFERENCE
BLES
TA

EXPANDERS

WIEDEKE ROLLER TUBE EXPANDER

FOR HAND USE ONLY

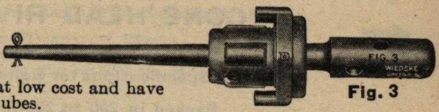


Fig. 3

The Wiedeke Roller Expanders are made of a serviceable material, with mandrels and rolls of tool steel and hardened. Designed for satisfactory service at low cost and have large range for various gauge tubes.

Rolls cannot fall out of frames unless mandrels are removed.

Frame, being one piece, has no separate collar or pin at rear of guard to work loose or get lost, throwing expander out of commission. Also furnishes a good bearing for guard, which straddles straight or beaded tubes and can be taken off if neccessary by removing retaining spring.

LIST PRICE FIGURE 3

Sizes marked + carried in stock. Other sizes from factory.

EXPANDER, MARKED For Outside Dia. tubes (in.)	+1	1⅛	+1¼	1⅜	+1½	1⅝	+1¾	+1⅞	+2	2⅛
Enters inside dia. (in.)....	25/32	⅞	1	1 3/32	1 7/32	1⅜	1½	1 39/64	1 23/32	1 13/16
Expands to (in.)....	29/32	1 1/32	1 5/32	1 5/16	1 7/16	1⅝	1¾	1⅞	2	2⅛
Approx. Wt. boxed (lbs.)....	2	2	2	2	2	4	4	4	6	6
Price Complete....	$10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	12.00
Extra Mandrels Each....	$ 2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Extra Rolls, Fig. 3-R, Each	$ .20	.20	.20	.20	.20	.20	.20	.20	.20	.20

EXPANDER MARKED For Outside Dia. tubes (in.)	+2¼	2⅜	+2½	2⅝	+2¾	+3	+3¼	+3½	3¾	+4
Enters Inside dia. (in.)....	1 15/16	2 1/16	2 5/32	2 9/32	2 13/32	2⅝	2⅞	3⅛	3⅜	3 9/16
Expands to (in.)....	2¼	2⅜	2½	2⅝	2¾	3	3¼	3½	3¾	4
Approx. Wt. boxed (lbs.)....	6	8	8	9	9	11	14	16	18	21
Price Complete....	$12.00	14.00	14.00	16.00	16.00	18.00	20.00	23.00	25.00	27.00
Extra Mandrels Each....	$ 2.00	2.50	2.50	3.25	3.25	3.75	4.25	4.75	5.50	5.75
Extra Rolls, Fig. 3-R Each	$ .20	.20	.20	.35	.35	.35	.50	.50	.60	.60

WIEDEKE IDEAL ACE ALL STEEL FRICTIONLESS SELF FEED EXPANDER

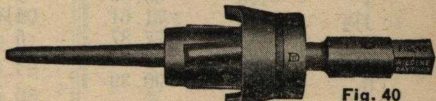


Fig. 40

The Wiedeke Ideal All Steel Expanders made of special analysis steel with mandrels and rolls of selected tool steel, carefully heat treated for service and wear, embodying logical designs for efficiency, durability and economy, have large range for various gauge tubes. Guards work close to rivet line or shell and on narrow bridges. Long reversible rolls double service, cannot fall in or out of frames when mandrels are removed, operate easier, do not cut mandrel and roll tube ends full length..

Fig. 40 Self-Feed Frictionless Expander for power or hand use, rolls lay at an angle to mandrel insuring gradual feed, steady and even expansion when power is applied. Bronze Bearing absorbs friction.

Sizes 15/16" to 1½", inclusive, Mandrel Shank ½" sq.
Sizes 1⅝" to 2⅞", inclusive, Mandrel Shank ¾" sq.
Sizes 3" to 6", inclusive, Mandrel Shank 1" sq.

LIST PRICE FIGURE 40

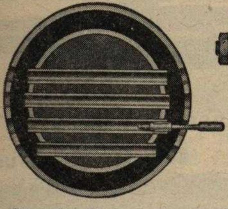
EXPANDER MARKED For Outside Dia. tubes (in.)	15/16	1	1 1/16	1⅛	1 3/16	1¼	1 5/16	1⅜	1 7/16	1½
Enters inside (in.)....	25/32	27/32	⅞	15/16	1	1 1/16	1 3/32	1 5/32	1 7/32	1 9/32
Expands to (in.)....	29/32	1	1 1/32	1⅛	1 5/32	1¼	1 5/16	1⅜	1 7/16	1½
Approx. Wt. boxed (lbs.)....	4	4	4	4	4	4	4	4	5	5
Price Complete....	$16.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00
Extra Mandrels Each....	$ 3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50
Extra Rolls Each....	$ .30	.30	.30	.30	.30	.30	.30	.30	.30	.30

EXPANDER MARKED For Outside Dia. tubes (in.)	1⅝	1¾	1⅞	2	2⅛	2¼	2⅜	2½	2⅝	2¾
Enters inside dia. (in.)....	1⅜	1½	1 39/64	1 23/32	1 15/16	1 15/16	2 1/16	2 5/32	2 9/32	2 13/32
Expands to (in.)....	1⅝	1¾	1⅞	2	2⅛	2¼	2⅜	2½	2⅝	2¾
Approx. Wt. boxed (lbs.)....	7	7	7	8	8	9	9	12	12	17
Price Complete....	$16.00	16.00	16.00	16.00	18.00	18.00	19.50	19.50	22.00	22.00
Extra Mandrels Each....	$ 3.50	3.50	3.50	3.50	3.50	3.50	4.50	4.50	4.50	4.50
Extra Rolls Each....	$ .30	.30	.30	.30	.30	.30	.30	.30	.60	.60

EXPANDER MARKED For Outside Dia. tubes (in.)	2⅞	3	3¼	3½	3¾	4	4¼	4½	5	5½
Enters inside dia. (in.)....	2½	2⅝	2⅞	3⅛	3⅜	3 9/16	3 13/16	4 1/16	4½	4 15/16
Expands to (in.)....	2⅞	3	3¼	3½	3¾	4	4¼	4½	5	5½
Approx. Wt. boxed (lbs.)....	18	19	22	23	25	27	30	31	37	44
Price Complete....	$22.00	22.00	24.50	24.50	27.00	27.00	40.00	50.00	55.00	60.00
Extra Mandrels Each....	$ 5.50	5.50	5.50	6.50	6.50	7.50	10.00	10.00	15.00	18.00
Extra Rolls Each....	$ .60	.60	.70	.70	.80	.80	1.10	1.10	2.00	2.50

IDEAL GARBAGE SELF-FEED EXPANDER

SHIPPED FROM CHICAGO



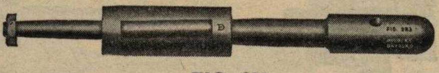


FIG. 283

Passes through plug hole, rolls tube full width of sheet regardless at what angle tubes enter, see illustration.

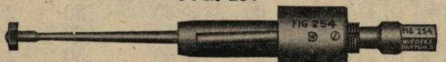
Sizes in Chicago stock 1⅜″, 1½″ and 2″. Other sizes made to order.

Size of Expander for Outside Tubes, Inches	1⅜	1½	1⅞	2	2¼
Enters I. D.	1 5/32	1 9/32	1 39/64	1 23/32	1 15/16
Expands to	1⅜	1½	1⅞	2	2¼
Price complete	$16.00	$16.00	$16.00	$16.00	$16.00
Extra mandrels each	3.50	3.50	3.50	3.50	3.50
Extra rolls each	.40	.40	.40	.40	.40

IDEAL ADJUSTABLE CONDENSER

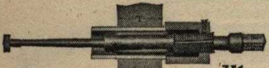
ALL STEEL ROLLER TUBE EXPANDER

FIG. 254

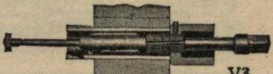


The Ideal Tube Expanders for Condensers, Heat Exchangers and similar units are made in a large range of sizes. They are self feeding, have adjustable collar which telescopes over rolls and contacts tube end or sheet, avoids pulling tube, see V-1 and V-2.

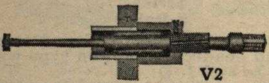
These expanders are made with plain (straight) rolls and with taper rolls in various lengths as listed below. Collar can be reversed to obtain one inch additional reach so that expanders with taper rolls can be used to roll tube in thick sheets in two operations, see V-3 and V-4.



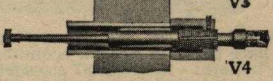
V1



V3



V2



V4

TYPE EXPANDER		Maximum Rolling Length	Expander Complete Each	Extra Mandrels Each	Extra Rolls Each	Size Square Shank	Weight Expander Boxed
Type Roll	Length Roll						
*Plain Rolls	1⅜″	1⅛″	$16.00	$3.50	$.30	7/16	1½ lbs.
Taper Rolls	1½″	1¼″	16.00	3.50	.50	7/16	1½ lbs.
Taper Rolls	2¼″	2″	18.00	3.50	.70	7/16	1½ lbs.

***Sizes Carried in Stock with Plain (Straight) Rolls**

Expander marked	C-508	C-520	C-532	C-544	C-554	C-566
For outside dia. tubes	⅝″	11/16″	¾″	13/16″	⅞″	15/16″
B. W. gauges of tubes	16 & 17	16 & 17	16 & 17	16 & 17	14 & 15	14 & 15
Enters inside dia.	31/64″	35/64″	39/64″	43/64″	45/64″	49/64″
Expands to	9/16″	⅝″	11/16″	¾″	13/16″	⅞″
Expander marked	C-584	C-600	C-616	C-644	C-658	C-672
For outside dia. tubes	1″	1 1/16″	1⅛″	1¼″	1⅜″	1½″
B. W. gauges of tubes	14 & 15	13 & 14	13 & 14	12 & 13	13 & 14	13 & 14
Enters inside dia.	13/16″	27/32″	29/32″	1″	1⅛″	1¼″
Expands to	15/16″	1″	1 1/16″	1 5/32″	1 5/16″	1 7/16″

Other sizes of Fig. 254 Expanders with plain (straight) rolls and all sizes with taper rolls shipped direct from factory. Write for special circular listing all sizes from 25/64″ to 1⅜″ I.D.

WRITE FOR DISCOUNTS

Fig. 54—Wiedeke Ideal Master Roller

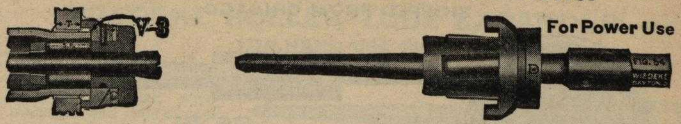
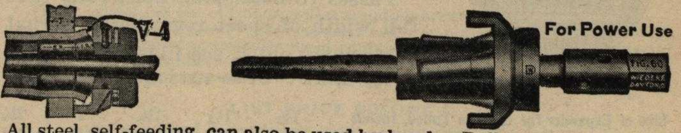


Fig. 60—Wiedeke Ideal Master Flarer



All steel, self-feeding, can also be used by hand. Rolls cannot fall out of frame. Fig. 54 sets and rolls tube uniformly for bead in one operation, see V-3. Fig. 60 rolls and flares tube in one operation, see V-4.

SHIPPED DIRECT FROM FACTORY AT DAYTON, O.

Size of Expander for O.D. Tubes In.	Enters I.D. Tubes and Expands to Inches	Expander Complete No. 63 No. 69 Each	Extra			Approx. Ship. Wt. Expander Lbs.
			Mandrels Each	Straight Roll 54-R Each	Combination Roll 60-R Complete	
1⅝	1 ⅜ to 1⅝	$16.00	$3.50	$.30	$2.00	7
1¾	1 ½ to 1¾	16.00	3.50	.30	2.00	7
1⅞	1 39/64 to 1⅞	16.00	3.50	.30	2.00	7
2	1 23/32 to 2	16.00	3.50	.30	2 00	8
2⅛	1 13/16 to 2⅛	18.00	3.50	.30	2.20	8
2¼	1 15/16 to 2¼	18.00	3.50	30	2.40	9
2½	2 5/32 to 2½	19.50	4.50	.30	2.60	12
3	2 ⅝ to 3	22.00	5.50	.60	3.00	19
3¼	2 ⅞ to 3¼	24.50	5.50	.70	3.20	22
3½	3 ⅛ to 3½	24.50	6.50	.70	3.60	23
4	3 9/16 to 4	27.00	7.50	.80	4.00	27

IDEAL EXPANDERS

For Modern Boiler Tube Installation and Maintenance

Series 1500
4 Roller

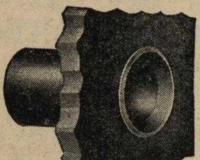
Series 1700
5 Roller

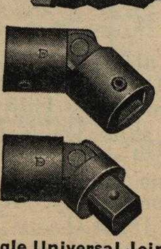
Series 1500 to 2600 Ideal Expanders are especially designed to roll and flare tubes in drums, economizers and headers of modern type water tube boilers. Made in 37 sizes from 1⅜" to 3⅝" I. D.

Operating equipment and short mandrels are furnished to roll and flare tubes in water wall headers and other headers where tubes are not in direct line with hand hole.

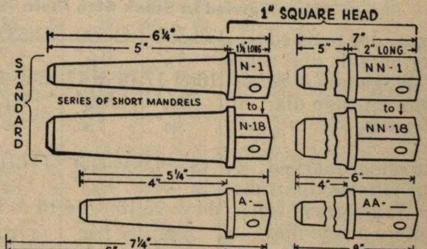
For complete data on these high grade Ideal Expanders write for IDEAL BULLETIN NO. 65, also IDEAL CATALOG NO. 57 illustrating and describing complete line of tube expanders and tube cutting tools.

Flared Tube End
Tube Wall Rolled Parallel





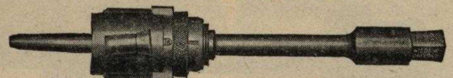
Single Universal Joint



No. 200 WIEDEKE IDEAL B & W ROLLING AND FLARING TUBE EXPANDERS

SHIPPED FROM CHICAGO

FOR POWER OR HAND USE



(Old Fig. 145-N)

For Water Tube Boilers. Made entirely of steel, carefully heat treated for long service. Complete expander passes through hand hole same dia. as tube. Rolls cannot fall in or out of frames when mandrels are removed, expands and flares tubes or nipples in one operation at most any point of any make water tube boiler using jointed mandrels. Split guard is adjustable and reversible for various thickness tube sheet or reaching through nipples.

No. 200 is self-feeding for power or hand use, No. 195 for hand use only. All mandrels and rolls shown interchange except rolls No. 200 S-1, S-2 fitting power expander No. 200 only.

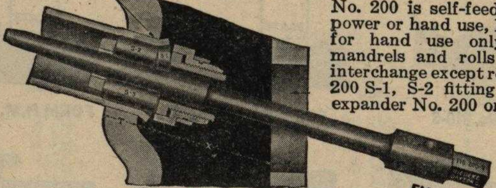


FIG. 200-V

COMBINATION ROLL STRAIGHT & FLARING FIG. 200 S-1, S-2

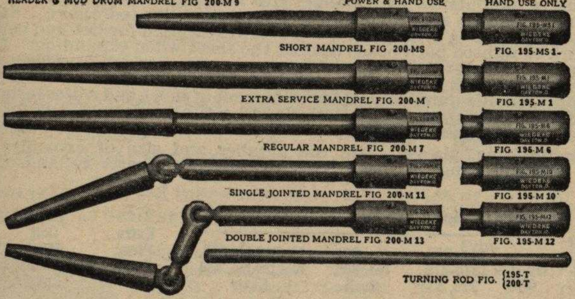
STRAIGHT ROLL FIG. {195 S-3 / 200 S-3}

TAPER ROLL FIG {195 T-3 / 200 T-3}

HEADER & MUD DRUM MANDREL FIG 200-M 9

COMBINATION HEADS FOR POWER & HAND USE

ROUND HEADS FOR HAND USE ONLY



SHORT MANDREL FIG 200-MS

FIG. 195-MS 1

EXTRA SERVICE MANDREL FIG. 200-M

FIG. 195-M 1

REGULAR MANDREL FIG 200-M 7

FIG. 195-M 6

SINGLE JOINTED MANDREL FIG 200-M 11

FIG. 195-M 10

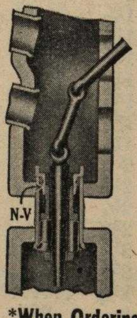
DOUBLE JOINTED MANDREL FIG 200-M 13

FIG. 195-M 12

TURNING ROD FIG. {195-T / 200-T}

Size of Expander for O.D. Tube In.	Enters I.D. Tubes and Expands to Inches	Expander Complete No. 195-V No. 200-V	Extra Rolls No. 200 S-3	Extra Rolls No. 200 T-3	Approx. Ship. Wt. Lbs.
2	1 5/8 to 1 7/8	$ 40.00	$ .50	$1.00	9
2½	2 5/32 to 2½	44.00	.70	1.20	14
2¾	2 13/32 to 2¾	44.00	.70	1.20	16
3	2 5/8 to 3	45.00	.80	1.20	20
3¼	2 7/8 to 3¼	45.00	1.00	1.40	21
3½	3 1/8 to 3½	48.00	1.10	1.40	22
3¾	3 3/8 to 3¾	50.00	1.20	1.60	23
4	3 9/16 to 4	50.00	1.20	1.60	24
4½	4 1/16 to 4½	100.00	2.50	3.00	55
5	4 9/16 to 5	100.00	2.50	3.00	60

Size of Expander for O.D. Tube In.	Number 195-MS1 200-MS 200-M9	Number 195-M1 195-M6 200-M 200-M7	Number 195-M10 200-M11	Number 195-M12 200-M13	Extra Rolls Each No. 200 S-1, S-2
2	$ 5.00	$ 9.00	$12.00	$16.00	$2.00
2½	5.00	9.00	12.00	16.00	2.60
2¾	8.00	10.00	16.00	20.00	2.80
3	8.00	10.00	16.00	20.00	3.00
3¼	8.00	10.00	16.00	20.00	3.20
3½	8.00	12.00	16.00	20.00	3.60
3¾	8.00	12.00	16.00	20.00	3.60
4	8.00	12.00	16.00	20.00	4.00
4½	15.00	25.00	40.00	50.00	6.00
5	15.00	25.00	40.00	50.00	6.00



***When Ordering** always state number and largest size expander to enter tubes or nipples.

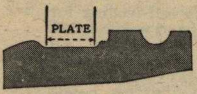
List shows smallest inside diameter expanders will enter and expand to.

WIEDEKE IDEAL TUBE EXPANDERS

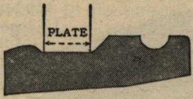
SHIPPED FROM DAYTON, OHIO

For Power or Hand Use

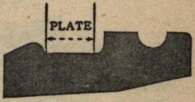
Ideal Sectional, all steel, fire box Tube Expanders are heat treated for toughness to withstand severe power production strains. Made to form a true circle when expanded, they have milled interchangeable sections with double taper, insuring contact of pin and sections at tube sheet only. The wide flat of each section slides freely on the correct milled flat of octagon self-releasing pins, insuring uniform distribution of sections and even expansion. Round pins can be used. Coil steel springs are flexible as rubber and not injured by heat or oil.



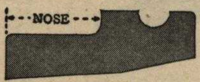
FORM A. No. 310-S



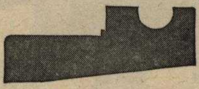
FORM B. No. 315-S



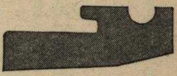
FORM H.M. No. 334-S



FORM H. No. 329-S



FORM K. No 300-S

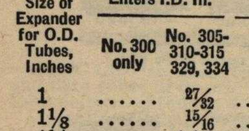


FORM F-1. No. 305-S

Form B is specified for new work. It raises a bead on the inside of the flue sheet, flares the outside for beading, thus bracing the sheet. Plate size, is the measurement across bottom of recess, as indicated above. Standard plate sizes are ½", 9⁄16" and ⅝". Form HM is used for hot and cold repair work to tighten both beads against the sheet when expanding. Form HM should be used for repair work where the new work was performed by Form B. Form H is for hot work on any thickness of tube sheet. Form K, sets copper ferrules uniformly 1⁄32" in from front of sheet and raises a shoulder inside so it cannot be moved if bumped by tube. Form F-1 is for uniform setting of tubes.

When ordering, always state the number and size of expander and plate. The following list shows smallest inside diameter expanders will enter.

Size of Expander for O.D. Tubes, Inches	Enters I.D. In.		Expander Complete		Extra Pins, Each	Extra Coil Steel Springs Each	Approx. Ship. Weight Expander Lbs.
	No. 300 only	No. 305-310-315 329, 334	No. 300 No. 305 Each	No.310, No.315, No.329 No. 334 Each			
1	......	27⁄32	....	$11.00	$2.50	$0.30	3
1⅛	......	15⁄16	....	11.00	2.50	.30	3
1¼	......	1 1⁄16	....	11.00	2.50	.30	3½
1⅜	......	1 5⁄32	....	11.00	2.50	.30	4
1½	......	1 9⁄32	....	11.00	2.50	.30	4
1⅝	1⅜	1 ⅜	$11.00	11.00	2.50	.30	4
1¾	1½	1 ½	11.00	11.00	2.50	.30	4½
1⅞	1⅝	1 39⁄64	12.00	12.00	2.50	.30	4½
2	1¾	1 23⁄32	12.00	12.00	2.50	.30	5
2⅛	1⅞	1 13⁄16	12.00	12.00	2.50	.30	5½
2¼	2	1 15⁄16	12.00	12.00	2.50	.30	6
2⅜	......	2 1⁄16	....	14.00	3.00	.40	6
2½	2¼	2 5⁄32	15.00	15.00	3.00	.40	7½
2⅝	......	2 9⁄16	....	16.00	3.00	.50	8
2¾	......	2 13⁄32	....	18.00	3.50	.50	9
3	2¾	2 ⅝	20.00	20.00	4.50	.50	10
3¼	3	2 ⅞	24.00	24.00	4.50	.60	12
3½	3¼	3 ⅛	27.00	27.00	6.00	.70	14
3¾	......	3 ⅜	....	30.00	6.00	.70	16
4	3¾	3 9⁄16	30.00	30.00	6.00	.70	17



No. 321-K

Master Knock-Out, No. 321-K, for Pneumatic Hammer use, releases pin instantly and safely using hammer at, R.

No. 1 for expanders 1⅜" to 1⅞" inc.........$5.00
No. 2 for expanders 2" to 2⅜" inc.........$5.00

WRITE FOR DISCOUNTS

IDEAL SAFETY POWER CUTTERS

SHIPPED FROM DAYTON, OHIO

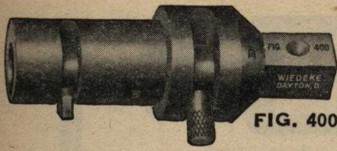


FIG. 400

IDEAL RAILROAD TUBE CUTTER

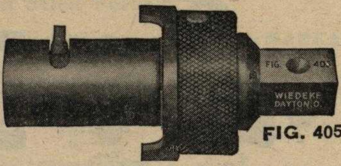


FIG. 405

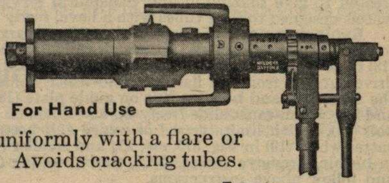
IDEAL SAFETY TUBE CUTTER

Ideal ALL STEEL Tube Cutters are heat treated for hard usage, are self-feeding, cut tubes clean and square in ONE revolution. Fig. 405 cuts tubes uniformly 1½″ from outside of flue sheet reaching beyond expanded and swedged portion whether tubes are flush, straight, flared or beaded. Control lever always shows position of knife and in the Fig. 405 is protected by knurled safety collar.

Size of Tube Cutter for O.D. Tubes, Inches	Enters and Cuts Tubes I.D. Inches	Tube Cutter Complete Each	Extra High Speed Knives		Size of Square Shank Inches	Approx. Ship. Wt. Tube Cutter Lbs.
			Each	Per Doz.		
1¾	1 7/16	$40.00	$1.00	$6.00	1	7
1⅞	1 9/16	40.00	1.00	6 00	1	8
2	1 11/16	40.00	1.00	6.00	1	9
2⅛	1 13/16	40.00	1 00	6.00	1	10
2¼	1 15/16	40.00	1.00	6.00	1	11
3	2 ⅝	70.00	1.50	10.00	1	20
3¼	2 ⅞	70.00	1.50	10.00	1	23
3½	3 ⅛	80.00	1.50	10.00	1	27
4	3 9/16	80.00	1.50	10.00	1	35
5½	4 13/16	120.00	2.00	20.00	1½	55

Fig. 375—Wiedeke Ideal Self-Feed Tube Cutters

SHIPPED FROM CHICAGO

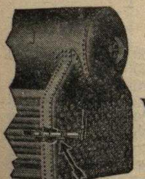


For Hand Use

Cuts off new or old tubes uniformly with a flare or bevel ready to bead or weld. Avoids cracking tubes.

V-1

Size of Tube Cutter for O.D. Tubes In.	Enters and Cuts Tubes I.D. Inches	Tube Cutter Complete Each	Extra Cutters		Approx. Ship Wt. Tube Cutter Lbs.
			Each	Per Doz.	
2	1 23/32	$30.00	$.80	$4.80	18
2¼	1 31/32	32.00	.80	4.80	19
2½	2 7/32	34.00	.80	4.80	20
2¾	2 15/32	36.00	.80	4.80	22
3	2 11/16	44.00	.80	4.80	29
3¼	2 ⅞	46.00	.80	4.80	30
3½	3 ⅛	48.00	.80	4.80	32
4	3 ⅝	50.00	.80	4.80	33
4½	4 1/16	80.00	1.60	9.60	51
5½	4 15/16	95.00	2.00	12.00	55



V-2

Connect Extension to reach in smoke box (V-1) or through water leg (V-2).

Fig. 377 Extensions

No. D-1½ fits tube cutters 2″ to 2¾″, length 19″, wt. 9 lbs. $8.00
No. E-1½ fits tube cutters 3″ to 4″, length 19″, wt. 12 lbs. $8.00
Other lengths quoted upon request, give distance at XX.

EXTRA PARTS FOR FIG. 377

377-F

377-R

377-C

377-S

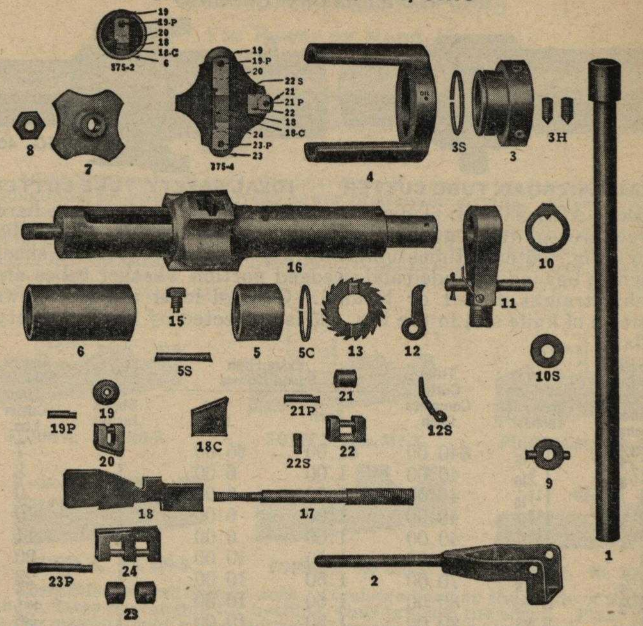
Ext. Marked	(No.)	D-1½	E-1½
Ext. Frame	377-F	$ 7.00	7.00
Ext. Feed Rod	377-R	2.20	2.20
Ext. Coupling	377-C	.80	.80
Ext. Set Screw	377-S	.30	.30

WRITE FOR DISCOUNTS

BELTING — HOSE
SAW BLADES
MACHINERY
LOADS — STRUCTURAL SECTIONS
COLOR CODE
AISI & SAE SPECIFICATIONS
AVERAGE PHYSICAL PROPERTIES
TOLERANCES — CUTTING EXTRAS
EFERENCE ABLES ATA

IDEAL SELF FEED TUBE CUTTER PARTS

SHIPPED FROM DAYTON, OHIO



Extra Parts for Ideal Tube Cutters and Extensions, shown on opposite page, are made of quality material, all working parts of selected tool steel, carefully heat treated to give maximum and economical service. Special contour of our cutter wheels designed to flare tubes with a bevel ready for beading.

Replacing parts in Fig. 375 sizes 3" and larger. To insert cutter wheel (19) or rolls (23) remove stop bolt (15), which will allow feed rod (17) attached to feed wedge (18) to be drawn outward releasing carriers (20 and 24) from lips on guide plate (18-C), drive out pins from the flattened end which holds pin stationary. Replace them in the same way and **be sure lips** on guide plate (18-C) **enter grooves in carriers** (20 and 24), which must slide freely up and down on feed wedge (18), then replace stop bolt (15), which limits travel of wedge and keeps carriers in positions. To insert cutter wheel (19) in Fig. 375, size 2¾ and smaller (in which the feed wedge (18) slides in bushing) remove spring (5-C), short bushing (5), then take out stop shaft (5-S) and follow above instructions.

When Ordering } State number of part, quantity, also figure number and size of Tube Cutter or letter and number size of Extension.

List Price of Extra Parts Each Fig. 375-377, Write for Discounts

		TUBE CUTTER MARKED (in.)									
NAME OF PART	No. of Part	2	2¼	2½	2¾	3	3¼	3½	4	4½	5½
Ratchet Handle........	1	$ .80	$ .80	$ .80	$ .80	$1.20	$1.20	$1.20	$1.20	$2.00	$2.00
Feed Handle...........	2	1.40	1.40	1.40	1.40	1.40	1.40	1.40	1.40	"	"
Adjustable Collar.......	3	2.00	2.20	2.40	2.60	2.80	3.00	3.20	3.40	6.00	8.00
Collar Screws (2).......	3-H	.40	.40	.40	.40	.40	.40	.40	.40	.40	.40
Collar Spring..........	3-S	.20	.20	.20	.20	.20	.20	.20	.20	"	"
Guard................	4	2.60	2.60	3.00	3.00	3.60	3.60	4.00	4.60	8.00	12.00
Short Bushing.........	5	.60	.80	1.00	1.00	.....	.....	.....	.....	.....	.....
Bushing Spring.........	5-C	.20	.20	.20	.20	.....	.....	.....	.....	.....	.....
Stop Shaft............	5-S	"	"	"	"	.....	.....	.....	.....	.....	.....
Long Bushing..........	6	1.20	1.40	1.40	1.40	1.60	1.60	1.60	1.60	2.00	2.00
Steadying Plate........	7	.60	.60	.60	.60	1.00	1.00	1.00	1.00	1.60	"
Nut.................	8	.20	.20	.20	.20	.20	.20	.20	.20	.20	.20
Feed Nut.............	9	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.60	1.60
Ratchet Collar.........	10	.60	.60	.60	.60	.60	.60	.60	.60	1.20	1.20
Steel Washer..........	10-S	.20	.20	.20	.20	.20	.20	.20	.20	.40	.40
Ratchet Frame.........	11	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	8.00	8.00
Pawl................	12	.80	.80	.80	.80	.80	.80	.80	.80	1.60	1.60
Pawl Spring...........	12-S	.20	.20	.20	.20	.20	.20	.20	.20	.20	.20
Ratchet Wheel.........	13	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	3.00	3.00
Stop Bolt.............	15	.....	.....	.....	.....	.40	.40	.40	.40	.40	.40
Feame...............	16	10.00	12.00	14.00	16.00	18.00	19.00	20.00	21.00	32.00	36.00
Fred Rod.............	17	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.80	1.80
Feed Wedge...........	18	3.60	3.60	3.60	3.60	4.60	4.60	4.60	4.60	7.00	7.00
Guide Plate...........	18-C	.40	.40	.40	.40	.60	.60	.60	.60	.80	.80
Cutter Wheel each......	19	.80	.80	.80	.80	.80	.80	.80	.80	1.60	2.00
Cutter Wheels per doz..	19	4.80	4.80	4.80	4.80	4.80	4.80	4.80	4.80	9.60	12.00
Cutter Carrier Pin......	19-P	.20	.20	.20	.20	.20	.20	.20	.20	.40	.40
Cutter Carrier.........	20	1.80	1.80	1.80	1.80	1.80	1.80	1.80	1.80	4.00	4.00
Single Carrier Roll......	21	.....	.....	.....	.....	.40	.40	.40	.40	.80	.80
Single Carrier Pin......	21-P	.....	.....	.....	.....	.20	.20	.20	.20	.40	.40
Single Roll Carrier......	22	.....	.....	.....	.....	1.60	1.60	1.60	1.60	3.00	3.00
Single Carrier Screw....	22-S	.....	.....	.....	.....	.20	.20	.20	.20	.40	.40
Double Carrier Rolls (2)	23	.....	.....	.....	.....	1.20	1.20	1.20	1.20	2.80	2.80
Double Carrier Pin.....	23-P	.....	.....	.....	.....	.40	.40	.40	.40	.60	.60
Double Roll Carrier...	24	.....	.....	.....	.....	3.20	3.20	3.20	3.20	6.00	6.00

MARKAL PAINTSTIKS

Real Paint in Stick Form

Any surface that will take liquid paint can be marked permanently with **MARKAL PAINTSTIKS.**

Applied equally well indoors or outdoors, whether surface is wet, dry or oily. It will not peel or dry out. All markings are fadeproof, weatherproof, permanent and highly legible.

FOR COLD MARKING

FOR COLD MARKING

MARKAL "B"—For oily surfaces, rough surfaces, such as castings, slabs and billets, extremely cold surfaces, wet or dry, sleek metal surfaces, or surfaces covered with combined oil and water film. Excellent for marking extremely smooth surfaces such as aluminum, stainless steel and plastic.

MARKAL "C"—All purpose marker. Will mark cold surfaces wet or dry up to 160° F. Primarily designed for sheet steel, bakelite, rubber and plate glass marking.

MARKAL "N"—For layout work in shipyards, steel mills, etc., irrespective of whether plates are bare or covered with zinc chromate coating or any protective coating employed on pickled plates. Marks dry instantaneously.

MARKAL "S"—Makes wide heavy markings similar to MARKAL "C".

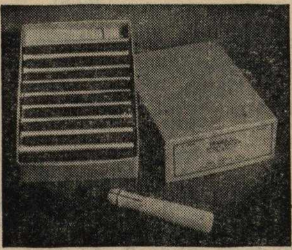
Cold MARKAL is furnished in Red, White, Blue, Green, Yellow, Black, Orange, Purple, and Pink. Packed 12 of a single color with individual holders to unit package. 12 packages to gross carton.

FOR ANNEALING AND WELDING

MARKAL "A"—For marking on hot or cold surfaces ranging from 60° to 1600° F. Especially adapted for identifying parts that have to be annealed. Marking is done while parts are cold.

Made in white and yellow only. Packed 12 in unit packages. 12 packages to gross carton.

FOR HOT MARKING



FOR HOT MARKING

MARKAL "H"—To mark on hot surfaces ranging from 150° to 1500°. Outmarks hot chalk 3 to 3½ times to 1. Has the advantage of marking at a lower temperature encountered in many mill operations.
Furnished in Red, White, Blue, Green, Yellow, Black.
Packed 36 of a single color with 1 wooden holder in unit package.
4 packages to gross carton.
Marks are easily removed in pickling bath.

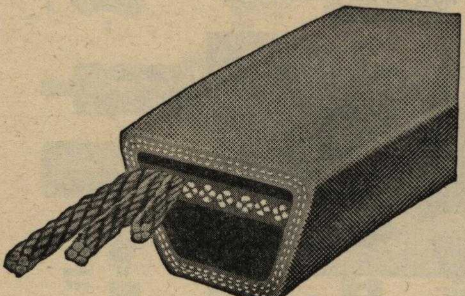
MARKAL "HT"—For extremely hot surface marking 250° to 1800°. Outmarks ordinary hot chalk 5½ to 6 times to 1. Will not run, char, flow, discolor, peel, or crack. Dries instantaneously.
Made in white and yellow only.
Packed 36 sticks in unit package. 4 unit packages to gross carton.
Marks easily removed in pickling bath.

SPECIAL COLORS
SEND FOR DESCRIPTIVE LITERATURE AND PRICE LISTS
SAMPLES UPON REQUEST

BELTING — HOSE
SAW BLADES
MACHINERY
LOADS — STRUCTURAL SECTIONS
COLOR CODE
AISI & SAE SPECIFICATIONS
AVERAGE PHYSICAL PROPERTIES
TOLERANCES — CUTTING EXTRAS
EFERENCE
ABLES
ATA

SHIPPED FROM CHICAGO

CONDOR V - BELTS
FOR MULTIPLE GROOVE SERVICE



Whipcord Construction

Flexibility and Strength are ideally obtained in Condor's parallel "Whipcord" construction. Two layers of tie-gum securely weld each whipcord to the other. No other construction approaches this in Flexibility, Stength and **extreme lack** of Stretch.

Our belts are molded and not manufactured by cutting individual belts from sleeves. They are cured in steel moulds which insures exactness and uniformity in cross sectional dimensions. This eliminates whipping caused by belts of uneven dimensions seating at various depths in pulley grooves.

Our belts have a cover completely surrounding the core of the belt, preventing longitudinal cords separating from the main body of cord by constant belt flexing.

CONDOR'S 8 POINTS OF BALANCE

1. Wide margin of strength
2. Minimum inelastic stretch
3. Uniform flexibility
4. Maximum resistance to structural breakdown
5. Smooth running
6. Maximum traction
7. High resistance to side wear
8. Correct lateral reinforcement

These 8 points of Balance are correctly embodied in every Condor V-Belt. All other factors being equal, the useful life of a V-Belt is limited by excessive stretch. Condor V-Belts stretch **only** 1.6% to 1.9% on length of belt.

"A" Section ½" x 11/32"

Size No.	Pitch Length	Wt. Ozs.	List Price
A– 26	27.0″	3	$1.30
A– 31	32.0″	3½	1.40
A– 35	36.0″	4	1.50
A– 38	39.0″	4	1.60
A– 42	43.0″	4½	1.70
A– 46	47.0″	5	1.80
A– 51	52.0″	5½	1.90
A– 60	61.0″	6½	2.10
A– 68	69.0″	7½	2.30
A– 75	76.0″	8	2.50
A– 80	81.0″	8½	2.70
A– 85	86.0″	9	2.90
A– 90	91.0″	10	3.10
A– 96	97.0″	10½	3.30
A–105	106.0″	11½	3.60
A–112	113.0″	12	4.00
A–120	121.0″	13	4.30
A–128	129.0″	14	4.60

"B" Section 21/32" x 7/16"

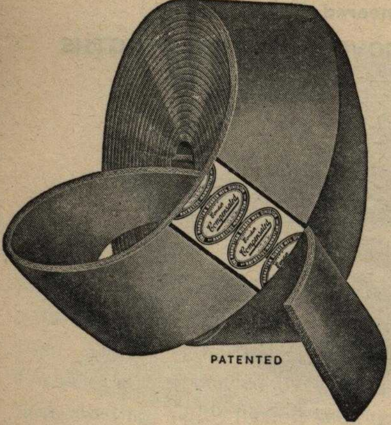
Size No.	Pitch Length	Wt. Ozs.	List Price
B–35	36.5″	6	$2.00
B–38	39.5″	6½	2.20
B–42	43.5″	7	2.40
B–46	47.5″	8	2.60
B–51	52.5″	9	2.80
B–55	56.5″	9½	2.90
B–60	61.5″	10	3.00
B–65	66.5″	10	3.20
B–68	69.5″	11½	3.30
B–75	76.5″	13	3.60
B–81	82.5″	14	3.90
B–85	86.5″	14½	4.10
B–90	91.5″	15½	4.30
		Lbs.	
B–93	94.5″	⅞	4.50
B–97	99.0″	⅞	4.70

"C" Section ⅞" x 17/32"

Size No.	Pitch Length	Wt. Lbs.	List Price
C– 51	53.0″	1	$4.60
C– 60	63.0″	1	5.40
C– 68	70.0″	1¼	6.10
C– 75	77.0″	1½	6.70
C– 81	83.0″	1½	7.30
C– 85	87.0″	1½	7.50
C– 90	92.0″	1¾	8.10
C– 96	98.0″	2	8.60
C–105	107.0″	2	9.40
C–112	114.0″	2	10.00
C–120	122.0″	2¼	10.70
C–128	130.0″	2½	11.40
C–144	146.0″	2¾	12.80
C–158	160.0″	3	14.00
C–162	164.0″	3	14.30
C–173	175.0″	3¼	15.30
C–180	182.0″	3½	16.00
C–195	197.0″	3¾	17.30

CONDOR COMPENSATED BELTING

SHIPPED FROM CHICAGO



**Advantages—
Compensated Plies**

1. Ruptures in outside ply eliminated.
2. Freedom from ply separation.
3. Longer fastener life.
4. Can be operated on smaller pulleys.
5. For heavy loads, plies may be increased with same pulleys.
6. High production efficiency.
7. Material reduction in belting costs.

THE COMPENSATED PRINCIPLE

In the general procedure of manufacturing rubber belting, duck plies are laid-up on a flat area. Power stresses are thus equal only on the straight-away pull, which is not where a belt does most of its work. The strains and nearly all fatigue come when the belt is flexed around the pulley under high tension. This explains why fasteners and outer plies often fail and ply separation occurs in the conventional belt.

Condor Compensated Belt avoids this. It is so constructed that the stresses developed at the arc of contact are equally borne by all plies. The outside plies no longer bear an overload. No ply is called upon to do more than its equal share of work.

Condor Compensated Belt may be used safely in plies heavier than the conventional belt over small pulleys. It will hold fasteners longer because of equalized ply stresses. It is well adapted to drives equipped with take-up idler pulleys. This belt should be cut slightly longer than ordinary rubber belt to allow for more slack and low tension.

STANDARD TRANSMISSION BELT LIST

Revised July 10, 1925

Width in Ins.	2 Ply per ft.	3 Ply per ft.	4 Ply per ft.	5 Ply per ft.	6 Ply per ft.	7 Ply per ft.	8 Ply per ft.
1	$ .18	$ .20	$ .24	....	....	....	....
1¼	.23	.26	.30	....	....	....	....
1½	.27	.31	.36	$ .45	....	....	....
1¾	.32	.36	.42	.53	....	....	....
2	.34	.39	.46	.58	$ .69	$ .81	$ .92
2½	.42	.48	.56	.70	.84	.98	1.12
3	.48	.55	.65	.81	.98	1.14	1.31
3½	.57	.65	.76	.95	1.14	1.33	1.52
4	.61	.70	.82	1.03	1.23	1.44	1.65
4½	.68	.78	.92	1.15	1.38	1.61	1.84
5	.76	.87	1.02	1.28	1.53	1.79	2.05
6	.91	1.04	1.22	1.53	1.83	2.14	2.44
7	1.07	1.22	1.43	1.79	2.15	2.50	2.86
8	1.15	1.31	1.54	1.93	2.31	2.70	3.08
9	1.29	1.47	1.73	2.16	2.60	3.03	3.46
10	1.43	1.63	1.92	2.40	2.88	3.36	3.84
11	1.57	1.79	2.11	2.64	3.17	3.69	4.22
12	1.72	1.96	2.30	2.88	3.45	4.03	4.60
13	1.86	2.13	2.50	3.13	3.75	4.38	5.00
14	2.00	2.29	2.69	3.36	4.04	4.71	5.38
15	2.14	2.45	2.88	3.60	4.32	5.04	5.76
16	2.29	2.62	3.08	3.86	4.62	5.40	6.16
18	2.57	2.94	3.46	4.32	5.20	6.06	6.92

BELTING
—
HOSE

SAW BLADES

MACHINERY

LOADS
—
STRUCTURAL SECTIONS

COLOR CODE

AISI & SAE SPECIFICATIONS

AVERAGE PHYSICAL PROPERTIES

TOLERANCES
—
CUTTING EXTRAS

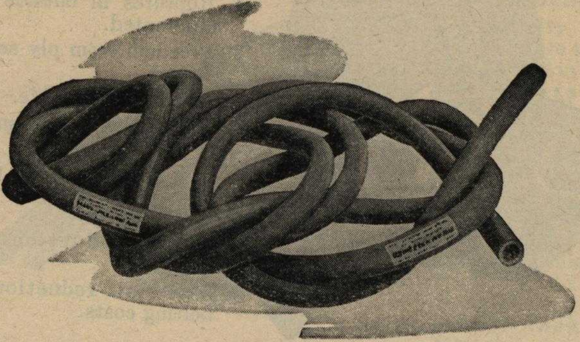
EFERENCE
ABLES
—
ATA

SHIPPED FROM CHICAGO

HOMO - FLEX HOSE

Balanced Engineered Construction

BRAIDED - WRAPPED COVERS - 50-FOOT LENGTHS



Length of Homo-Flex Hose, showing extreme flexibility.

HOMO - FLEX ADVANTAGES

1. **Extreme flexibility**—easy to handle.
2. **Light in weight.**
3. **Practically inseparable cover and plies**—balanced homogeneous construction.
4. **Withstands high pressures** with wide margins of safety.
5. **Uniform** inside and outside diameters.
6. **Less elongation and expansion.**

HOMO-FLEX WATER HOSE

Due to the present restriction on the use of Rubber and Cotton Fabrics, Homo-Flex brand of Water Hose has been temporarily discontinued.

HOMO-FLEX AIR HOSE FOR AIR DRILLS, PNEUMATIC TOOLS, ETC.

This Air Hose combines ruggedness with light weight and flexibility. It is constructed with an inside tube that is thick and resists the deteriorating effects of oil and coupling wear. Super-strength cords embedded in Flexlastic form the strength members. Provided with heavy abrasion resisting cover of black Flexlastic.

Furnished in lengths up to 50 feet and in regular sizes from ⅜″ to 1″. Now made with Flexlastics compound throughout, not oil-proof. Also made as an air-oil hose with Flexlastic S cover—Flexlastic oil-proof tube.

CONDOR

Condor Air-Drill Hose can be made with Flexlastic S cover and Flexlastic M tube for heavy duty service.

SHIPPED FROM CHICAGO

STEAM HOSE

Condor Wrapped Duck Steam Hose is our best standard grade and is especially designed for heavy duty work. Its construction combines features that guarantee great satisfaction and long service. The strong duck is woven to our own specifications and the Flexlastic is compounded by experts to furnish the ultimate in a heat-resisting, highly flexible and rugged steam hose. Over a Flexlastic tube, compounded to withstand the deteriorating action of steam at high temperatures, are placed plies of heavy duck separated by layers of heat-insulating Flexlastic. Over this is placed a tough, long-wearing black rubber cover. Condor Brand is furnished in all sizes and plies in lengths of 50 feet.

CONDOR WATER HOSE

The best grade of duck plied hose for heavy duty and high pressure. Constructed with plies of heavy duck with Flexlastic tube and with thick wear-resisting cover, in 50 foot lengths.

DELHI WATER HOSE

This is a popular and economical grade of water hose. It is constructed with Flexlastic tube, frictioned duck wrapping and suitable cover. It is recommended for general use and manufactured in 50 foot lengths.

WHIPCORD WATER HOSE

This is a molded braided water hose, suitable for general water hose service. It is constructed with black Flexlastic tube, plies of cotton braid and black Flexlastic cover. Made in two and three braid and in long lengths and standard sizes.

CONVEYOR AND ELEVATOR BELTS

There are many factors to be taken into consideration before prescribing the proper conveyor belt for a given installation. Our Engineers will be glad to study your conditions in order to assure the specifying of the Proper Belt.

We solicit your inquiries.

SAW BLADES
MACHINERY
LOADS — STRUCTURAL SECTIONS
COLOR CODE
AISI & SAE SPECIFICATIONS
AVERAGE PHYSICAL PROPERTIES
TOLERANCES — CUTTING EXTRAS
EFERENCE ABLES ATA

ATKINS SAW BLADES

SHIPPED FROM CHICAGO

AAA STANDARD HAND HACKSAW BLADES

Flexible Back—Hard Edge—Non Breakable

For Cutting Cast Iron, Slate, Machine Steel and Other Soft Solid Stock (Raker Set)

Length Inches	Width Inches	Thickness	CODE NUMBER				Wgt. per Gross Lbs.	List per Gross
			14 Teeth	18 Teeth	24 Teeth	32 Teeth		
10	½	23 ga. or .025	...	300	310	315	4¾	$10.00
12	½	23 ga. or .025	304	300	310	315	5¾	12.00

SILVER STEEL HAND HACKSAW BLADES

Length Inches	Width Inches	Thickness	CODE NUMBER				Wgt. per Gross Lbs.	List per Gross
			14 Teeth	18 Teeth	24 Teeth	32 Teeth		
10	½	23 ga. or .025	....	1810	2410	3210	5	$40.32
12	½	23 ga. or .025	1412-H	1812	2412	3212	6½	48.96

SILVER STEEL LIGHT POWER BLADES AND HEAVY-DUTY HAND BLADES

Length Inches	Width Inches	Thickness	CODE NUMBER		Wgt. per Gross Lbs.	List per Gross
			14 Teeth	18 Teeth		
12	⅝	21 ga. or .032	1412-P	1812-H	10	$108.00

SILVER STEEL POWER HACKSAW BLADES

Length Inches	Width Inches	Thickness	CODE NUMBER				Wgt. per Gross Lbs.	List per Gross
			4 Teeth	6 Teeth	10 Teeth	14 Teeth		
12	1	18 ga. or .049	...	....	......	1412	26½	$172.80
	1	16 ga. or .065	...	....	1012	....	35	172.80
14	1	18 ga. or .049	...	....	......	1414	30½	201.60
	1	16 ga. or .065	...	....	1014	....	40½	201.60
	1¼	16 ga. or .065	414	614-P	1014-P	....	50	252.00
17	1	18 ga. or .049	...	....	......	1417	37	244.80
	1	16 ga. or .065	...	....	1017	....	48	244.80
	1¼	16 ga. or .065	417	617	1017-P	....	61½	306.00
18	1	16 ga. or .065	...	....	1018	....	50½	259.20
	1¼	16 ga. or .065	418	618	1018-P	....	64	324.00

EXTRA HEAVY HIGH SPEED STEEL POWER BLADES

For Use In Heavy-Duty Machines Only

Length Inches	Width Inches	Thickness	CODE NUMBER		Wgt. per Gross Lbs.	List per Gross
			4 Teeth	6 Teeth		
18	1½	.072	4718	6718	85	$427.68
21	2	.072	4721	6721	134	665.28
24	2	.072	4724	6724	159	760.32
	2	.100	4124	....	213	1036.80
30	2½	.100	4130	....	360	1620.00

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ATKINS SAW BLADES

SHIPPED FROM CHICAGO

A-MOL MOLYBDENUM HIGH SPEED STEEL HAND HACKSAW BLADES

A-MOL MOLYBDENUM HIGH SPEED STEEL POWER HACKSAW BLADES

SHIPPED FROM CHICAGO

AVAILABLE IN ALL STANDARD SIZES

ATKINS METAL CUTTING BAND SAWS

SHIPPED FROM CHICAGO

Flexible Back—Hard Edge

Lineal Lengths

Width	Gage	Number of Teeth	List Price Per Foot	Welding
3/32″	.025	18, 32	$0.10	$0.40
1/8″	.025	14, 18, 24	.10	.40
3/16″	.025	10, 14, 18, 24, 32	.10	.40
1/4″	.025	10, 12, 14, 18, 24, 32	.10	.40
3/8″	.025	8, 10, 14, 18, 24	.10	.40
1/2″	.025	6, 10, 14, 18, 24	.11	.40
5/8″	.032	8, 10, 14, 18, 24	.14	.50
3/4″	.032	6, 8, 10, 12, 14	.16	.50
1″	.035	6, 8, 10, 14	.20	.50

Standard raker set only on all tooth spaces except 32 tooth, which will be standard wave set only.

WRITE FOR DISCOUNTS

MARVEL METAL CUTTING SAWS

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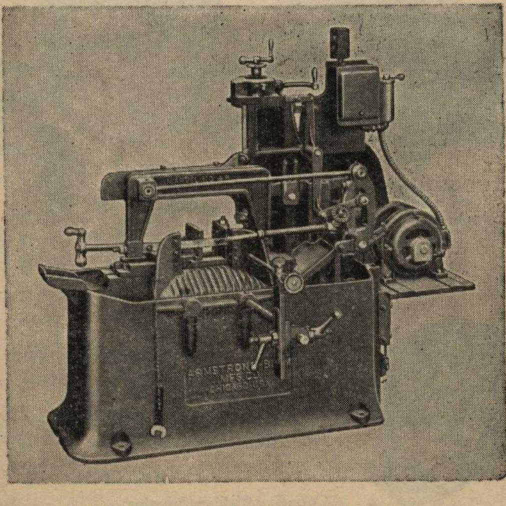

We can furnish prices and literature on all sizes and types of Hack Saws.

SAW BLADES
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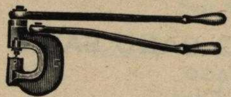
LOADS — STRUCTURAL SECTIONS
COLOR CODE
AISI & SAE SPECIFICATIONS
AVERAGE PHYSICAL PROPERTIES
TOLERANCES — CUTTING EXTRAS
FERENCE
BLES
ATA

HAND PUNCHES AND SHEARS

No. 10 PUNCH

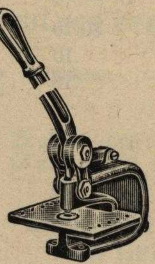
Capacity ⅜" hole in ¼" Mild Steel. Weight 8½ lbs.

No. 12 PUNCH



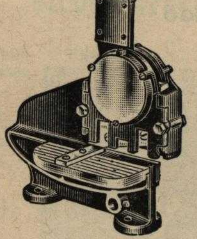
Capacity ⅜" hole in ¼" Mild Steel. Weight 11 lbs.

No. 16 PUNCH

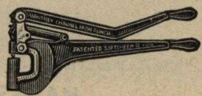


Capacity ⅜" hole in ¼" Mild Steel. Weight 33 lbs.

No. 6 SLITTING SHEARS



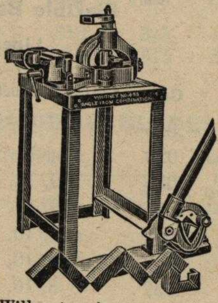
Will cut all thicknesses up to ³⁄₁₆", throatless drop forged, weight 23½ lbs.



CHANNEL IRON PUNCH

Capacity ¼ in. hole in ¼ in. Mild Steel. Length 23 in. Weight 16½ lbs. Throat 1⅞ in.

No. 455 MACHINE



Will cut, mitre and bend 2"x2"x¼" angle iron, weight 270 lbs.

No. 1. PORTABLE PUNCH

Capacity ⅜ in. hole in ¼ in. Mild Steel. Weight 22 lbs. Throat 1⅞ in.

No. 20 PUNCH

Capacity, ½" hole in ½" Mild Steel. Weight 20 lbs. 2" Throat.

ANGLE IRON SHEARS

All steel construction

No. 62 Size

Capacity 3"x3"x¼" angles Weight 154 lbs.

No. 4 Size

Capacity 2"x2"x¼" angles Weight 44 lbs.

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U. S. UTILITY GRINDERS

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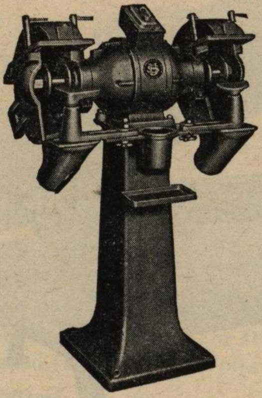

Totally enclosed motors.
Dust-proof, anti-friction bearings.
Enclosed adjustable wheel guards.

CAN BE FURNISHED IN ALL SIZES.
Motors Ball-bearing—Totally Enclosed—Fan Cooled.
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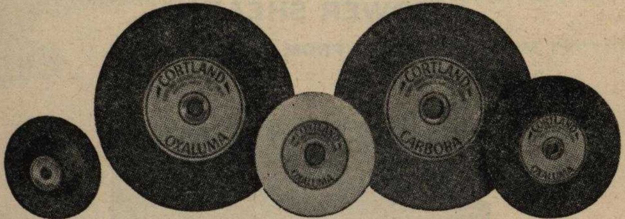

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A Large Assortment Carried In Stock

Consult us about your grinding problems

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LOADS — STRUCTURAL SECTIONS
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EFERENCE ABLES ATA

KALAMAZOO METAL CUTTING BAND SAW

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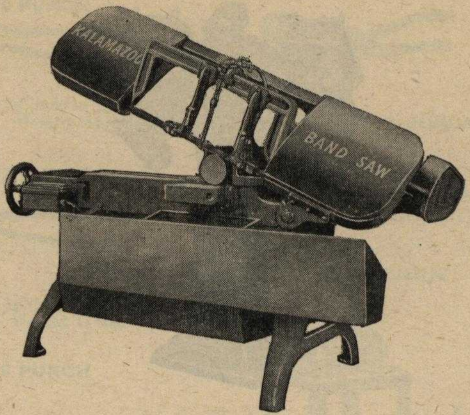


Throat capacity 8″ x 16″ and 8″ x 24″.

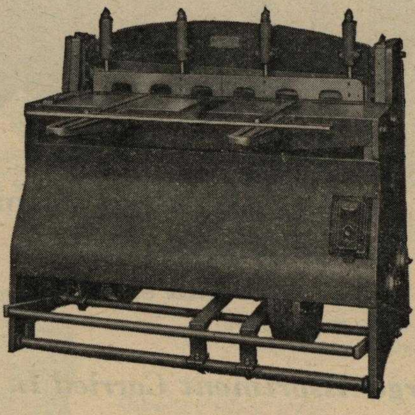
Flexibility, speed and accuracy make this coolant Model Kalamazoo Band Saw a highly efficient machine for Metal Cutting.

Portable—Plugs In Anywhere

WRITE FOR BULLETIN AND COMPLETE SPECIFICATIONS

POWER SHEARS

SHIPPED FROM FACTORY



We can furnish prices and literature on all sizes and types of Hand and Power Shears

STANLEY ELECTRIC DRILLS

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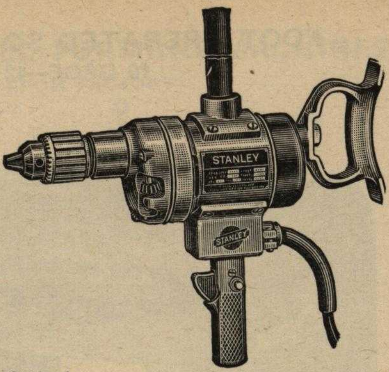
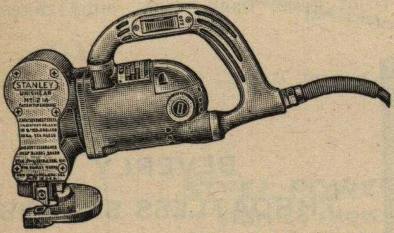


Instantaneous Switch
Full Ball Bearing
Straight Line Design
Universal Motors For AC or DC
Furnished 115, 230 or 250 Volts

No.	Capacity	Full Load Chuck Speed	No.	Capacity	Full Load Chuck Speed
4624	¼″	500 R.P.M.	382	⅜″	600 R.P.M.
....	¼″	1300 R.P.M.	121	½″	380 R.P.M.
140	¼″	1300 R.P.M.	122	½″	385 R.P.M.
142	¼″	1000 R.P.M.	582	⅝″	290 R.P.M.
562	5/16″	750 R.P.M.	342	¾″	250 R.P.M.
381	⅜″	600 R.P.M.	781A	1″	125 R.P.M.

Any of these drills used in a Stanley Drill Stand makes an economical drill press.



STANLEY UNISHEARS

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Motor-Driven Tools for Fast,
Accurate Cutting of Sheet Metal

No.	Capcity—Hot Rolled Steel	Minimum Radius
Mighty Midget	18 Gage	1″
16A	16 Gage	1⅜″
214	14 Gage	½″-1¼″
144A	12 Gage	2½″
208	8 Gage	....

BENCH AND STATIONARY MODELS

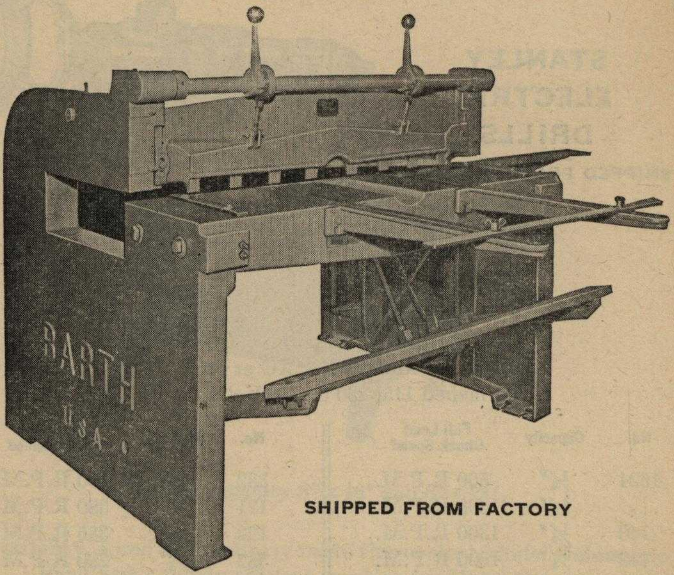
No.	Capacity—Hot Rolled Steel	Minimum Radius
A14	14 Gage	3″
A10	10 Gage	6″
O15	14 Gage	¼″
O36	14 Gage	¼″
O54	14 Gage	¼″

Stanley Unishears follow straight or curved lines, angles with hairline accuracy, 100% safe.

LOADS — STRUCTURAL SECTIONS
COLOR CODE
AISI & SAE SPECIFICATIONS
AVERAGE PHYSICAL PROPERTIES
TOLERANCES — CUTTING EXTRAS
EFERENCE ABLES ATA

FOOT OPERATED SQUARING SHEAR

16 GAGE—42 INCH



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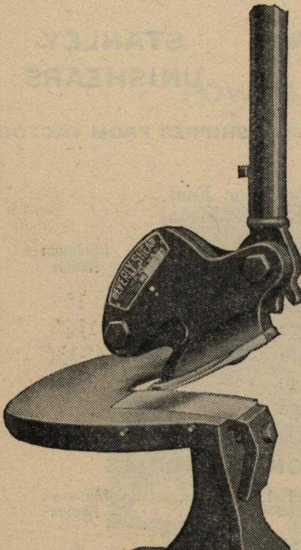
This newly designed heavy gage capacity Shear embodies the most modern improvements for balance and easy operation. The full gap in the housing permits the slitting of sheets to 18″. The slitting gage secures proper alignment of long sheets for successive cuts. Cuts full 42″ when used as a regular Squaring Shear.

Furnished with complete front gage, back gage, side gages, bevel gage and slitting gage.

BEVERLY THROATLESS SHEARS



The Beverly Throatless Shear is the most efficient on the market for intricate cutting jobs, and is equal to any ordinary shear for straight work.

Shears metal without distortion.

This shear is made in three sizes.

B-1 Capacity 14 Gage	Weight 16½ Pounds.
B-2 Capacity 10 Gage	Weight 33 Pounds.
B-3 Capacity $\frac{3}{16}$ Inch	Weight 55 Pounds.

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IMPROVED SLIP ROLL FORMING MACHINES

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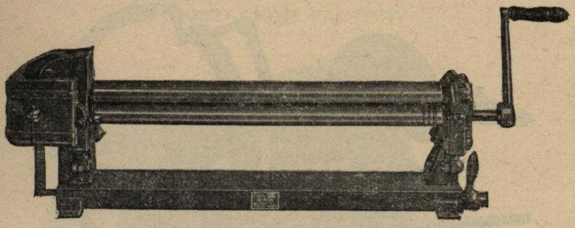

Available In 2″, 2½″, 3″ and 4″ size of rolls.

These Slip Roll Formers embody all of the features desired in a Forming Roll.

WHITNEY-JENSEN HAND BRAKE

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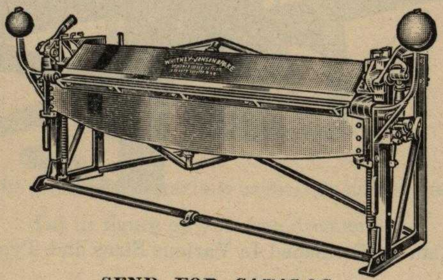
LENGTHS 4 ft. TO 10 ft.



#14 Ga. and LIGHTER

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STEEL POWER BRAKE

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STEEL CONSTRUCTION

Lengths from 3 feet to 16 feet.
Capacities ¾ inch plates or lighter.
Furnished also hand operated.

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LOADS — STRUCTURAL SECTIONS
COLOR CODE
AISI & SAE SPECIFICATIONS
AVERAGE PHYSICAL PROPERTIES
TOLERANCES — CUTTING EXTRAS
EFERENCE ABLES
ATA

ANGLE BENDING ROLLS

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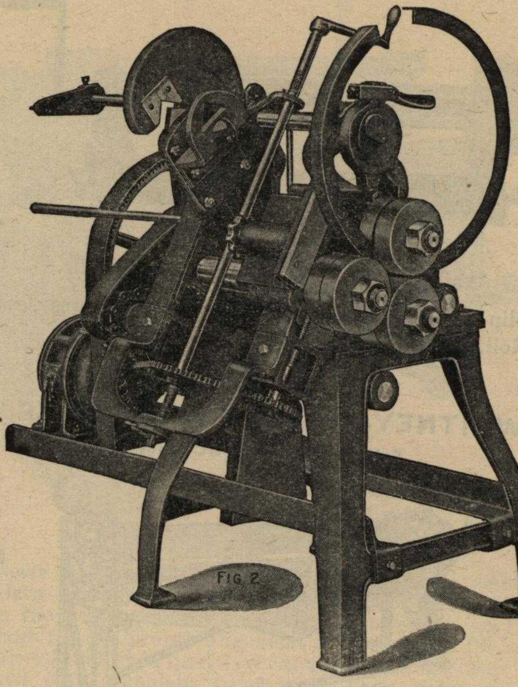

Can Be Furnished In Various Sizes and Types
Send Us Your Requirements

EVANS BAR AND ANGLE BENDERS

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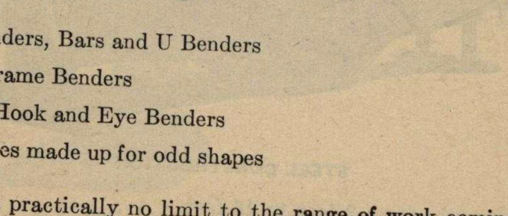

Angle Benders, Bars and U Benders
Awning Frame Benders
Conduit, Hook and Eye Benders
Special Dies made up for odd shapes

There is practically no limit to the range of work coming within the scope of these machines.

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ELECTRIC HOISTS

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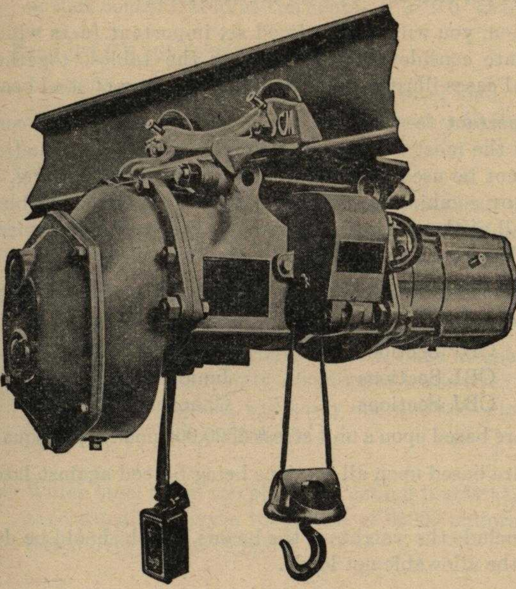

Can be furnished in various capacities and styles.

Let us figure on your requirements

POWER HAMMERS

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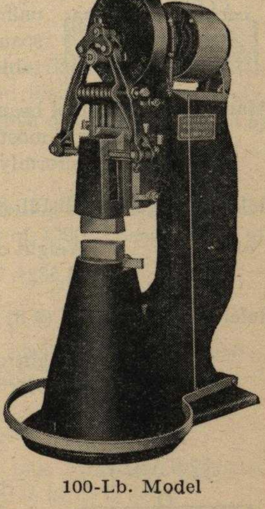
Smooth running at top or slow speed.

Striking a heavy or light blow under perfect and continuous control.

Made in 25 lb., 50 lb., 100 lb., 250 lb. and 500 lb. models.



100-Lb. Model

WRITE FOR PRICES

LOADS
—
STRUCTURAL SECTIONS

COLOR CODE

AISI & SAE SPECIFICATIONS

AVERAGE PHYSICAL PROPERTIES

TOLERANCES
—
CUTTING EXTRAS

EFERENCE
BLES
TA

EXPLANATION OF TABLES

The tables shown on the following pages were included in this book as a means of assisting you in the practical selection of steel sections required for the support of static vertical loads.

In addition, you will find outlined six important facts which must be taken into consideration when using the tables, together with four typical cases illustrating the proper selection of steel beams.

It is important to note that we have dealt only with conditions relating to the most common and simple types of construction. The tables cannot be used in connection with eccentric loading, moving loads, or any combinations thereof. If your particular problem does not meet all of the general requirements outlined below, please contact our office—our engineers will be glad to assist you.

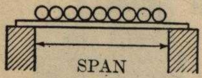
1. The safe load tables give the total allowable uniformly distributed loads in kips (1 Kip = 1000 pounds) for various spans of:

   CB Sections
   CBL Sections
   CBJ Sections
   Standard Beams
   Junior Beams
   Channels

2. Loads are based upon a unit stress of 20,000 pounds per square inch.
3. Loads are based upon all sections being braced against lateral deflection.
4. Loads include the weights of the beams, which should be deducted to find the allowable net loads.
5. Loads above horizontal solid lines produce the maximum allowable shear on the beam webs.
6. Loads below horizontal dotted lines produce deflections exceeding 1-360 of span, which is the maximum allowable deflection for plastered ceilings.

Case I

FULL TABLE



Simple beams supported at both ends with uniformly distributed loads over the entire spans, will carry the entire loads shown in the tables.

Example: Which steel beams, for use in connection with a plastered ceiling, will most economically carry a total load of 24,000 pounds uniformly distributed over a span of 19′0″?

Refer to Page 179 CB 121 @ 28#

or

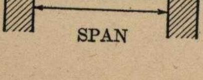
Weight of beam (532#) plus total load (24,000#) = 24,532#. Total allowable load is 25,000#.

Refer to Page 187 12″ @ 31.8# Standard Beam

Weight of beam (640#) plus total load (24,000#) = 24,604#. Total allowable load is 25,000#.

Case II

½ TABLE



Simple beams supported at both ends with single concentrated loads at the centers of spans will carry one half the loads shown in the tables.

EXPLANATION OF TABLES—Concluded

Example: Which steel beams, for use in connection with a plastered ceiling, will most economically carry a total load of 12,000 pounds concentrated at the center of a 19′0″ span?

Refer to Page 179 CB 121 @ 28#

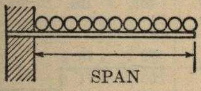
or Weight of beam (532#) plus total load (12,000#) = 12,532#. One half allowable load is 12,500 #.

Refer to Page 187 12″ @ 31.8# Standard Beam

Weight of beam (604#) plus total load (12,000)# = 12,604#. One half allowable table load is 12,500#.

Case III

¼ TABLE



Cantilever beams, fixed at one end, with uniformly distributed loads over the entire spans, will carry one quarter of loads shown in the tables:

Example: Which steel beam (no plastered ceiling involved) will most economically carry a total load of 6000# uniformly distributed over a span of 19′0″?

Refer to Page 179 CB 121 @ 32#

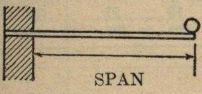
or Weight of beam (608#) plus total load (6000#) = 6608#. One quarter allowable table load is 7250#.

Refer to Page 187 12″ @ 35# Standard Beam

Weight of beam (665#) plus total load (6000#) = 6665#. One quarter allowable table load is 6750#.

Case IV

⅛ TABLE



Cantilever beams, fixed at one end, with single concentrated loads at the free ends, will carry one eighth of the loads shown in the tables.

Example: Which steel beam (no plastered ceiling involved) will most economically carry a total load of 3000# concentrated at free end of a 19′0″ span?

Refer to Page 179 CB 121 @ 36#

or Weight of beams (684#) plus total load (3000#) = 3684#. One eighth allowable table is 4000#.

Refer to Page 187 12″ @ 40.8# Standard Beam

Weight of beam (775#) plus total load (3000#) = 3775#. One eighth allowable table is 3875#.

All conditions and examples outlined above include bracing against lateral deflection.

LOADS — STRUCTURAL SECTIONS
COLOR CODE
AISI & SAE SPECIFICATIONS
AVERAGE PHYSICAL PROPERTIES
TOLERANCES — CUTTING EXTRAS
EFERENCE
BLES
ATA

C B JOIST SECTIONS

Allowable Uniform Load in Kips

Before using this table see page 176

Span in Feet	CBJ 6 8.5 lbs.	CBJ 8 10 lbs.	CBJ 10 11.5 lbs.	CBJ 12 14 lbs.
2	26			
3	23	35	46	62
4	16.9	26	35	49
5	13.5	21	28	40
6	11.3	17.3	23	33
7	9.7	14.8	20	28
8	8.5	13.0	17.5	25
9	7.5	11.5	15.6	22
10	6.8	10.4	14.0	19.7
11	6.1	9.4	12.7	17.9
12	5.6	8.7	11.7	16.4
13	5.2	8.0	10.8	15.2
14		7.4	10.0	14.1
15		6.9	9.3	13.2
16		6.5	8.7	12.3
17		6.1	8.2	11.6
18			7.8	11.0
19			7.4	10.4
20			7.0	9.9
21			6.7	9.4
22				9.0
23				8.6
24				8.2
25				7.9

C B LIGHT SECTIONS

Span in Feet	CBL 6		CBL 8		CBL 10			CBL 12		
	12 lbs.	16 lbs.	13 lbs.	15 lbs.	15 lbs.	17 lbs.	19 lbs.	16½ lbs.	19 lbs.	22 lbs.
2	36		48							
3	32	42	44	52	60	64	66	72	76	
4	24	34	33	39	46	54	63	58	71	84
5	19.3	27	26	32	37	43	50	47	57	68
6	16.1	22	22	26	31	36	42	39	48	56
7	13.8	19.2	18.8	23	26	31	36	33	41	48
8	12.1	16.8	16.5	19.7	23	27	31	29	36	42
9	10.7	15.0	14.6	17.5	20	24	28	26	32	38
10	9.7	13.5	13.2	15.7	18.4	22	25	23	29	34
11	8.8	12.2	12.0	14.3	16.7	19.6	23	21	26	31
12	8.0	11.2	11.0	13.1	15.3	18.0	21	19.4	24	28
13	7.4	10.4	10.1	12.1	14.2	16.6	19.3	17.9	22	26
14			9.4	11.2	13.1	15.4	17.9	16.7	20	24
15			8.8	10.5	12.3	14.4	16.7	15.6	19.0	23
16			8.2	9.8	11.5	13.5	15.7	14.6	17.8	21
17			7.7	9.3	10.8	12.7	14.7	13.7	16.8	19.8
18					10.2	12.0	13.9	13.0	15.9	18.7
19					9.7	11.4	13.2	12.3	15.0	17.8
20					9.2	10.8	12.5	11.7	14.3	16.9
21					8.8	10.3	11.9	11.1	13.6	16.1
22								10.6	13.0	15.3
23								10.1	12.4	14.7
24								9.7	11.9	14.1
25								9.3	11.4	13.5

JUNIOR BEAMS

Span in Feet	6″	7″	8″	9″	10″	11″	12″
	4.4 lbs.	5.5 lbs.	6.5 lbs.	7.5 lbs.	9.0 lbs.	10.3 lbs.	11.8 lbs.
2		23	28	34	40	48	54
3	10.7	15.6	21	26	35	43	53
4	8.0	11.7	15.7	19.3	26	32	40
5	6.4	9.3	12.5	15.5	21	26	32
6	5.3	7.8	10.4	12.9	17.3	21	27
7	4.6	6.7	9.0	11.0	14.9	18.3	23
8	4.0	5.8	7.8	9.7	13.0	16.0	20
9	3.6	5.2	7.0	8.6	11.6	14.2	17.8
10	3.2	4.7	6.3	7.7	10.4	12.8	16.0
11	2.9	4.2	5.7	7.0	9.5	11.6	14.5
12	2.7	3.9	5.2	6.4	8.7	10.7	13.3
13	2.5	3.6	4.8	5.9	8.0	9.8	12.3
14		3.3	4.5	5.5	7.4	9.1	11.4
15		3.1	4.2	5.2	6.9	8.5	10.7
16			3.9	4.8	6.5	8.0	10.0
17			3.7	4.5	6.1	7.5	9.4
18				4.3	5.8	7.1	8.9
19				4.1	5.5	6.7	8.4
20					5.2	6.4	8.0
21					5.0	6.1	7.6
22						5.8	7.3
23						5.6	7.0
24							6.7
25							6.4

C B SECTIONS

Span in Feet	CB 81			Deflection Inches for CB 81 only
	17 lbs.	19 lbs.	21 lbs.	
3	48			
4	47	52	54	.04
5	38	43	48	.07
6	31	36	40	.09
7	27	31	34	.13
8	24	27	30	.17
9	21	24	27	.21
10	18.8	21	24	.26
11	17.1	19.4	22	.31
12	15.7	17.8	20	.37
13	14.5	16.4	18.5	.44
14	13.4	15.2	17.1	.51
15	12.5	14.2	16.0	.58
16	11.7	13.3	15.0	.66
17	11.1	12.5	14.1	.75

See Pages 6 to 8 for List of sizes carried in stock.

One KIP equals 1,000 lbs.

C B SECTIONS

Allowable Uniform Load in Kips

Before using this table see Page 176

Span in Feet	CB 82		CB 83			Deflection Inches	CB 101				Deflection Inches
	24 lbs.	27 lbs.	31 lbs.	33 lbs.	35 lbs.		21 lbs.	23 lbs.	26 lbs.	29 lbs.	
4						.04	62				
5	50	58				.07	57	62	68	76	.05
6	46	52	60	62	66	.09	48	54	61	68	.07
7	40	45	52	56	59	.13	41	46	53	59	.10
8	35	39	46	49	52	.17	36	40	46	51	.13
9	31	35	41	43	46	.21	32	36	41	46	.17
10	28	31	37	39	42	.26	29	32	37	41	.21
11	25	28	33	36	38	.31	26	29	34	37	.25
12	23	26	30	33	35	.37	24	27	31	34	.30
13	21	24	28	30	32	.44	22	25	28	32	.35
14	19.8	22	26	28	30	.51	21	23	26	29	.41
15	18.5	21	24	26	28	.58	19.1	21	25	27	.47
16	17.3	19.5	23	24	26	.66	17.9	20	23	26	.53
17	16.3	18.4	22	23	24	.75	16.9	18.9	22	24	.60
18							15.9	17.9	20	23	.67
19							15.1	16.9	19.4	22	.75
20							14.3	16.1	18.4	21	.83
21							13.7	15.3	17.5	19.6	.91

Span in Feet	CB 102				CB 103				Deflection Inches
	33 lbs.	37 lbs.	41 lbs.	45 lbs.	49 lbs.	54 lbs.	60 lbs.	66 lbs.	
6	74	78	86						.07
7	67	76	85	92				124	.10
8	58	67	74	82	88	96	110	123	.13
9	52	59	66	73	81	90	99	109	.17
10	47	53	59	66	73	81	90	98	.21
11	42	48	54	60	66	73	81	89	.25
12	39	44	49	55	61	67	75	82	.30
13	36	41	46	50	56	62	69	76	.35
14	33	38	42	47	52	58	64	70	.41
15	31	36	40	44	49	54	60	66	.47
16	29	33	37	41	46	50	56	61	.53
17	28	31	35	39	43	47	53	58	.60
18	26	30	33	36	40	45	50	55	.67
19	25	28	31	35	38	42	47	52	.75
20	23	27	30	33	36	40	45	49	.83
21	22	25	28	31	35	38	43	47	.91

Span in Feet	CB 121				CB 122			Deflection Inches
	25 lbs.	28 lbs.	32 lbs.	36 lbs.	40 lbs.	45 lbs.	50 lbs.	
5	74							
6	69	74	86	98				.06
7	59	68	78	87	92	106	118	.08
8	52	59	68	77	87	97	108	.11
9	46	53	60	68	77	86	96	.14
10	41	48	54	61	69	78	86	.17
11	38	43	49	56	63	71	78	.21
12	34	40	45	51	58	65	72	.25
13	32	37	42	47	53	60	66	.29
14	29	34	39	44	49	55	62	.34
15	28	32	36	41	46	52	58	.39
16	26	30	34	38	43	49	54	.44
17	24	28	32	36	41	46	51	.50
18	23	26	30	34	38	43	48	.56
19	22	25	29	32	36	41	45	.62
20	21	24	27	31	35	39	43	.69
21	19.6	23	26	29	33	37	41	.76
22	18.7	22	25	28	32	35	39	.83
23	17.9	21	24	27	30	34	38	.91
24	17.2	19.8	23	26	29	32	36	.99
25	16.5	19.0	22	25	28	31	35	1.08

See Page 6 for List of sizes carried in stock.

One KIP equals 1,000 lbs.

COLOR CODE
AISI & SAE SPECIFICATIONS
AVERAGE PHYSICAL PROPERTIES
TOLERANCES — CUTTING EXTRAS
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ATA

C B SECTIONS

Allowable Uniform Load in Kips

Before using this table see page 176

Span in Feet	CB 123			CB 124				Deflection Inches
	53 lbs.	58 lbs.	64 lbs.	65 lbs.	72 lbs.	79 lbs.	85 lbs.	
8	108		130					
9	105	114	127	122	138	152	160	.14
10	94	104	114	117	130	143	154	.17
11	86	95	104	107	118	130	140	.21
12	79	87	95	98	108	119	129	.25
13	73	80	88	90	100	110	119	.29
14	67	74	82	84	93	102	110	.34
15	63	69	76	78	87	95	103	.39
16	59	65	72	73	81	89	96	.44
17	56	61	67	69	77	84	91	.50
18	52	58	64	65	72	79	86	.56
19	50	55	60	62	68	75	81	.62
20	47	52	57	59	65	71	77	.69
21	45	50	55	56	62	68	74	.76
22	43	47	52	53	59	65	70	.83
23	41	45	50	51	57	62	67	.91
24	39	43	48	49	54	60	64	.99
25	38	42	46	47	52	57	62	1.08

Span in Feet	CB 141				CB 142				Deflection Inches
	30 lbs.	34 lbs.	38 lbs.	42 lbs.	43 lbs.	48 lbs.	53 lbs.	58 lbs.	
5	98								
6	93	104	116	126					.05
7	80	92	104	116	110	122	134	148	.07
8	70	81	91	101	105	117	130	142	.10
9	62	72	81	90	93	104	115	126	.12
10	56	65	73	81	84	94	104	113	.15
11	51	59	66	74	76	85	94	103	.18
12	46	54	61	67	70	78	86	94	.21
13	43	50	56	62	64	72	80	87	.25
14	40	46	52	58	60	67	74	81	.29
15	37	43	49	54	56	62	69	76	.33
16	35	40	46	51	52	59	65	71	.38
17	33	38	43	48	49	55	61	67	.43
18	31	36	40	45	46	52	58	63	.48
19	29	34	38	43	44	49	55	60	.53
20	28	32	36	41	42	47	52	57	.59
21	27	31	35	39	40	45	49	54	.65
22	25	29	33	37	38	43	47	52	.72
23	24	28	32	35	36	41	45	49	.78
24	23	27	30	34	35	39	43	47	.85
25	22	26	29	32	33	37	42	45	.92
26	21	25	28	31	32	36	40	44	1.00
27	21	24	27	30	31	35	38	42	1.08
28	19.9	23	26	29	30	33	37	41	1.16
29	19.2	22	25	28	29	32	36	39	1.24
30	18.6	22	24	27	28	31	35	38	1.33

Span in Feet	CB 143			CB 144		CB 145					Deflection Inches
	61 lbs.	68 lbs.	74 lbs.	78 lbs.	84 lbs.	87 lbs.	95 lbs.	103 lbs.	111 lbs.	119 lbs.	
9	136	152	166								
10	123	137	150	156	166						.15
11	112	125	136	147	159		170	184	202	214	.18
12	102	114	125	135	145	152	167	182	196	210	.21
13	95	106	115	124	134	142	155	168	181	194	.25
14	88	98	107	115	125	132	143	156	168	180	.29
15	82	92	100	108	116	123	134	145	157	168	.33
16	77	86	94	101	109	115	126	136	147	158	.38
17	72	81	88	95	103	108	118	128	138	149	.43
18	68	76	83	90	97	102	112	121	131	140	.48
19	65	72	79	85	92	97	106	115	124	133	.53
20	62	69	75	81	87	92	100	109	118	126	.59
21	59	65	71	77	83	88	96	104	112	120	.65
22	56	62	68	73	79	84	91	99	107	115	.72
23	53	60	65	70	76	80	87	95	102	110	.78
24	51	57	62	67	73	77	84	91	98	105	.85
25	49	55	60	65	70	74	80	87	94	101	.92
26	47	53	58	62	67	71	77	84	90	97	1.00
27	46	51	56	60	65	68	74	81	87	94	1.08
28	44	49	54	58	62	66	72	78	84	90	1.16
29	42	47	52	56	60	64	69	75	81	87	1.24
30	41	46	50	54	58	61	67	73	78	84	1.33

See Page 7 for List of sizes carried in stock.

One KIP equals 1,000 lbs.

C B SECTIONS

Allowable Uniform Load in Kips

Before using this table see Page 176

Span in Feet	CB 161				CB 162				Deflection Inches
	36 lbs.	40 lbs.	45 lbs.	50 lbs.	58 lbs.	64 lbs.	71 lbs.	78 lbs.	
6	124	128	146	160					
7	107	123	138	154	168	184	204	224	.06
8	94	107	121	135	157	174	193	213	.08
9	83	95	107	120	139	154	172	189	.11
10	75	86	97	108	126	139	155	170	.13
11	68	78	88	98	114	126	141	155	.16
12	63	72	80	90	105	116	129	142	.19
13	58	66	74	83	97	107	119	131	.22
14	54	61	69	77	90	99	110	122	.25
15	50	57	64	72	84	93	103	114	.29
16	47	54	60	67	78	87	97	107	.33
17	44	51	57	63	74	82	91	100	.37
18	42	48	54	60	70	77	86	95	.42
19	40	45	51	57	66	73	81	90	.47
20	38	43	48	54	63	70	77	85	.52
21	36	41	46	51	60	66	74	81	.57
22	34	39	44	49	57	63	70	78	.63
23	33	37	42	47	55	60	67	74	.68
24	31	36	40	45	52	58	64	71	.75
25	30	34	39	43	50	56	62	68	.81
26	29	33	37	41	48	53	59	66	.87
27	28	32	36	40	47	52	57	63	.94
28	27	31	35	38	45	50	55	61	1.01
29	26	30	33	37	43	48	53	59	1.09
30	25	29	32	36	42	46	52	57	1.16
31	24	28	31	35	41	45	50	55	1.24
32	24	27	30	34	39	43	48	53	1.32
33	23	26	29	33	38	42	47	52	1.41
34	22	25	28	32	37	41	46	50	1.50

Span in Feet	CB 163				Deflection Inches	CB 181			Deflection Inches
	88 lbs.	96 lbs.	105 lbs.	114 lbs.		47 lbs.	50 lbs.	55 lbs.	
6						162			
7					.06	157	168	184	.06
8					.08	137	148	164	.07
9	212	228	250	274	.11	122	132	146	.09
10	202	222	242	263	.13	110	119	131	.12
11	183	201	220	239	.16	100	108	119	.14
12	168	185	202	219	.19	91	99	109	.17
13	155	170	186	203	.22	84	91	101	.19
14	144	158	173	188	.25	78	85	94	.23
15	135	148	162	176	.29	73	79	87	.26
16	126	138	151	165	.33	69	74	82	.29
17	119	130	143	155	.37	65	70	77	.33
18	112	123	135	146	.42	61	66	73	.37
19	106	117	128	139	.47	58	63	69	.42
20	101	111	121	132	.52	55	59	66	.46
21	96	106	115	125	.57	52	57	62	.51
22	92	101	110	120	.63	50	54	60	.56
23	88	96	105	114	.68	48	52	57	.61
24	84	92	101	110	.75	46	49	55	.66
25	81	89	97	105	.81	44	48	52	.72
26	78	85	93	101	.87	42	46	50	.78
27	75	82	90	98	.94	41	44	49	.84
28	72	79	87	94	1.01	39	42	47	.90
29	70	76	84	91	1.09	38	41	45	.97
30	67	74	81	88	1.16	37	40	44	1.03
31	65	71	78	85	1.24	35	38	42	1.11
32	63	69	76	82	1.32	34	37	41	1.18
33	61	67	73	80	1.41	33	36	40	1.25
34	59	65	71	77	1.50	32	35	39	1.33
35						31	34	37	1.41
36						31	33	36	1.49
37						30	32	35	1.57
38						29	31	35	1.66

See Page 7 for List of sizes carried in stock.

One KIP equals 1,000 lbs.

COLOR CODE
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C B SECTIONS

Allowable Uniform Load in Kips

Before using this table see Page 176

Span in Feet	CB 182				CB 183				Deflection Inches
	64 lbs.	70 lbs.	77 lbs.	85 lbs.	96 lbs.	105 lbs.	114 lbs.	124 lbs.	
8	188	206	224	250					.07
9	173	190	210	231					.09
10	156	171	189	208	242	264	286	316	.12
11	142	155	172	189	224	245	267	290	.14
12	130	142	157	173	205	225	245	266	.17
13	120	132	145	160	189	207	226	245	.19
14	111	122	135	149	176	193	210	228	.23
15	104	114	126	139	164	180	196	212	.26
16	98	107	118	130	154	169	183	199	.29
17	92	101	111	122	145	159	173	187	.33
18	87	95	105	116	137	150	163	177	.37
19	82	90	99	110	129	142	155	168	.42
20	78	86	95	104	123	135	147	159	.46
21	74	81	90	99	117	128	140	152	.51
22	71	78	86	95	112	123	133	145	.56
23	68	74	82	91	107	117	128	139	.61
24	65	71	79	87	103	112	122	133	.66
25	62	68	76	83	98	108	117	128	.72
26	60	66	73	80	95	104	113	123	.78
27	58	63	70	77	91	100	109	118	.84
28	56	61	68	74	88	96	105	114	.90
29	54	59	65	72	85	93	101	110	.97
30	52	57	63	69	82	90	98	106	1.03
31	50	55	61	67	79	87	95	103	1.11
32	49	53	59	65	77	84	92	100	1.18
33	47	52	57	63	75	82	89	97	1.25
34	46	50	56	61	72	79	86	94	1.33
35	45	49	54	60	70	77	84	91	1.41
36	43	48	53	58	68	75	82	89	1.49
37	42	46	51	56	67	73	79	86	1.57
38	41	45	50	55	65	71	77	84	1.66

Span in Feet	CB 211				CB 212				Deflection Inches
	59 lbs.	63 lbs.	68 lbs.	73 lbs.	82 lbs.	89 lbs.	96 lbs.	103 lbs.	
7	212	224	236						
8	199	213	233	252	270	294	316	336	.06
9	177	190	207	223	249	271	293	316	.08
10	159	171	187	201	224	244	264	284	.10
11	145	155	170	183	204	222	240	258	.12
12	133	142	155	167	187	203	220	237	.14
13	122	131	144	155	172	188	203	219	.17
14	114	122	133	144	160	174	188	203	.19
15	106	114	124	134	149	163	176	189	.22
16	99	107	117	126	140	152	165	178	.25
17	94	100	110	118	132	143	155	167	.29
18	88	95	104	112	124	135	146	158	.32
19	84	90	98	106	118	128	139	150	.36
20	80	85	93	101	112	122	132	142	.39
21	76	81	89	96	107	116	126	135	.43
22	72	78	85	91	102	111	120	129	.48
23	69	74	81	87	97	106	115	124	.52
24	66	71	78	84	93	102	110	118	.57
25	64	68	75	80	90	98	105	114	.62
26	61	66	72	77	86	94	101	109	.67
27	59	63	69	74	83	90	98	105	.72
28	57	61	67	72	80	87	94	102	.77
29	55	59	64	69	77	84	91	98	.83
30	53	57	62	67	75	81	88	95	.89
31	51	55	60	65	72	79	85	92	.95
32	50	53	58	63	70	76	82	89	1.01
33	48	52	57	61	68	74	80	86	1.07
34	47	50	55	59	66	72	78	84	1.14
35	46	49	53	57	64	70	75	81	1.21
36	44	47	52	56	62	68	73	79	1.28
37	43	46	50	54	61	66	71	77	1.35
38	42	45	49	53	59	64	69	75	1.42
39	41	44	48	52	57	63	68	73	1.50
40	40	43	47	50	56	61	66	71	1.58
41	39	42	46	49	55	59	64	69	1.66
42	38	41	44	48	53	58	63	68	1.74
43	37	40	43	47	52	57	61	66	1.82
44	36	39	42	46	51	55	60	65	1.91

See Pages 7 and 8 for List of sizes carried in stock.

One KIP equals 1,000 lbs.

C B SECTIONS

Allowable Uniform Load In Kips

Before using this table see Page 176

Span in Feet	CB 213				Deflection Inches	CB 241				Deflection Inches
	112 lbs.	122 lbs.	132 lbs.	142 lbs.		74 lbs.	80 lbs.	87 lbs.	94 lbs.	
8						266	284			
9						252	275	302	326	.07
10						227	248	272	295	.09
11	288	312	340	368	.12	207	225	248	268	.10
12	277	303	328	352	.14	189	206	227	245	.12
13	256	280	302	325	.17	175	191	210	227	.15
14	238	260	281	302	.19	162	177	195	210	.17
15	222	242	262	282	.22	152	165	182	196	.19
16	208	227	246	264	.25	142	155	170	184	.22
17	196	214	231	249	.29	134	146	160	173	.25
18	185	202	218	235	.32	126	138	151	164	.28
19	175	191	207	223	.36	120	130	143	155	.31
20	166	182	197	212	.39	114	124	136	147	.35
21	159	173	187	201	.43	108	118	130	140	.38
22	151	165	179	192	.48	103	113	124	134	.42
23	145	158	171	184	.52	99	108	118	128	.46
24	139	151	164	176	.57	95	103	114	123	.50
25	133	145	157	169	.62	91	99	109	118	.54
26	128	140	151	163	.67	87	95	105	113	.58
27	123	135	146	157	.72	84	92	101	109	.63
28	119	130	140	151	.77	81	89	97	105	.68
29	115	125	136	146	.83	78	85	94	102	.73
30	111	121	131	141	.89	76	83	91	98	.78
31	107	117	127	136	.95	73	80	88	95	.83
32	104	114	123	132	1.01	71	77	85	92	.88
33	101	110	119	128	1.07	69	75	83	89	.94
34	98	107	116	124	1.14	67	73	80	87	1.00
35	95	104	112	121	1.21	65	71	78	84	1.06
36	93	101	109	118	1.28	63	69	76	82	1.12
37	90	98	106	114	1.35	61	67	74	80	1.18
38	88	96	103	111	1.42	60	65	72	78	1.25
39	85	93	101	109	1.50	58	64	70	76	1.31
40	83	91	98	106	1.58	57	62	68	74	1.38
41	81	89	96	103	1.66					
42	79	87	94	101	1.74	54	59	65	70	1.52
43	77	85	91	98	1.82					
44	76	83	89	96	1.91	52	56	62	67	1.67
46						49	54	59	64	1.82
48						47	52	57	61	1.99
50						45	50	55	59	2.16

Span in Feet	CB 242			CB 243				Deflection tion Inches
	100 lbs.	110 lbs.	120 lbs.	130 lbs.	140 lbs.	150 lbs.	160 lbs.	
11	292	320	352					.10
12	277	305	332	356	378	402		.12
13	255	281	307	339	368	395	422	.15
14	237	261	285	315	342	367	394	.17
15	221	244	266	294	319	343	368	.19
16	207	229	249	276	299	321	345	.22
17	195	215	235	259	281	302	324	.25
18	184	203	222	245	266	286	306	.28
19	175	193	210	232	252	271	290	.31
20	166	183	199	221	239	257	276	.35
21	158	174	190	210	228	245	263	.38
22	151	166	181	200	217	234	251	.42
23	144	159	173	192	208	224	240	.46
24	138	153	166	184	199	214	230	.50
25	133	146	160	176	191	206	221	.54

Continued on Page 184.

See Page 8 for List of sizes carried in stock.

One KIP equals 1,000 lbs.

COLOR CODE
AISI & SAE SPECIFICATIONS
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TOLERANCES
—
CUTTING EXTRAS
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ATA

C B SECTIONS

Allowable Uniform Load in Kips

Before using this table see Page 176

Span in Feet	CB 242 Continued			CB 243 Continued				Deflection Inches
	100 lbs.	110 lbs.	120 lbs.	130 lbs.	140 lbs.	150 lbs.	160 lbs.	
26	128	141	153	170	184	198	212	.58
27	123	136	148	163	177	190	204	.63
28	119	131	142	158	171	184	197	.68
29	114	126	138	152	165	177	190	.73
30	111	122	133	147	159	171	184	.78
31	107	118	129	142	154	166	178	.83
32	104	114	125	138	149	161	172	.88
33	101	111	121	134	145	156	167	.94
34	98	108	117	130	141	151	162	1.00
35	95	105	114	126	137	147	158	1.06
36	92	102	111	123	133	143	153	1.12
37	90	99	108	119	129	139	149	1.18
38	87	96	105	116	126	135	145	1.25
39	85	94	102	113	123	132	141	1.31
40	83	92	100	110	120	129	138	1.38
42	79	87	95	105	114	122	131	1.52
44	75	83	91	100	109	117	125	1.67
46	72	80	87	96	104	112	120	1.82
48	69	76	83	92	100	107	115	1.99
50	66	73	80	88	96	103	110	2.16

Span in Feet	CB 271				CB 272				Deflection Inches
	91 lbs.	98 lbs.	106 lbs.	114 lbs.	145 lbs.	154 lbs.	163 lbs.	177 lbs.	
9	338	352	378	404					
10	311	340	370	399					.08
11	283	309	336	363					.09
12	259	284	308	332	420	446	472	514	.11
13	239	262	284	307	413	439	465	505	.13
14	222	243	264	285	384	407	431	469	.15
15	207	227	246	266	358	380	403	438	.17
16	194	213	231	249	336	357	377	411	.20
17	183	200	217	235	316	336	355	387	.22
18	173	189	205	222	298	317	336	365	.25
19	164	179	195	210	283	300	318	346	.28
20	156	170	185	200	269	285	302	329	.31
21	148	162	176	190	256	272	288	313	.34
22	141	155	168	181	244	259	275	299	.37
23	135	148	161	173	234	248	263	286	.41
24	130	142	154	166	224	238	252	274	.44
25	124	136	148	160	215	228	242	263	.48
26	120	131	142	153	207	219	232	253	.52
27	115	126	137	148	199	211	224	243	.56
28	111	122	132	143	192	204	216	235	.60
29	107	117	128	138	185	197	208	227	.64
30	104	114	123	133	179	190	201	219	.69
31	100	110	119	129	173	184	195	212	.74
32	97	106	116	125	168	178	189	205	.79
33	94	103	112	121	163	173	183	199	.83
34	92	100	109	117	158	168	178	193	.89
35	89	97	106	114	154	163	173	188	.94
36	86	95	103	111	149	159	168	183	.99
37	84	92	100	108	145	154	163	178	1.05
38	82	90	97	105	141	150	159	173	1.11
39	80	87	95	102	138	146	155	169	1.17
40	78	85	92	100	134	143	151	164	1.23
42	74	81	88	95	128	136	144	157	1.35
44	71	77	84	91	122	130	137	149	1.48
46	68	74	80	87	117	124	131	143	1.62
48	65	71	77	83	112	119	126	137	1.77
50	62	68	74	80	108	114	121	131	1.92
52	60	66	71	77	103	110	116	126	2.07
54	58	63	68	74	100	106	112	122	2.24
56	56	61	66	71	96	102	108	117	2.40

See Page 8 for List of sizes carried in stock.

One KIP equals 1,000 lbs.

C B SECTIONS

Allowable Uniform Load in Kips

Before using this table see Page 176

Span in Feet	CB 301				CB 302					Deflection Inches
	108 lbs.	116 lbs.	124 lbs.	132 lbs.	172 lbs.	180 lbs.	190 lbs.	200 lbs.	210 lbs.	
9	424	440								
10	399	437								.07
			458	484						
11	363	397	430	460						.08
12	332	364	394	422						.10
13	307	336	364	389	508					.12
14	285	312	338	362	503	522	556	582	612	.14
15	266	292	315	338	470	494	521	549	578	.16
16	249	273	296	316	440	463	488	515	542	.18
17	235	257	278	298	414	435	460	484	510	.20
18	222	243	263	281	391	411	434	458	481	.22
19	210	230	249	267	371	390	411	433	456	.25
20	200	219	236	253	352	370	391	412	433	.28
21	190	208	225	241	335	353	372	392	413	.30
22	181	199	215	230	320	337	355	374	394	.33
23	173	190	206	220	306	322	340	358	377	.37
24	166	182	197	211	294	309	326	343	361	.40
25	160	175	189	203	282	296	313	329	347	.43
26	153	168	182	195	271	285	301	317	333	.47
27	148	162	175	188	261	274	289	305	321	.50
28	143	156	169	181	252	264	279	294	310	.54
29	138	151	163	175	243	255	270	284	299	.58
30	133	146	158	169	235	247	261	275	289	.62
32	125	137	148	158	220	231	244	257	271	.71
34	117	129	139	149	207	218	230	242	255	.80
36	111	122	131	141	196	206	217	229	241	.89
38	105	115	124	133	185	195	206	217	228	1.00
40	100	109	118	127	176	185	195	206	217	1.10
42	95	104	113	121	168	176	186	196	206	1.22
44	91	99	107	115	160	168	178	187	197	1.34
46	87	95	103	110	153	161	170	179	188	1.46
48	83	91	99	106	147	154	163	172	181	1.59
50	80	88	95	101	141	148	156	165	173	.172
52	77	84	91	97	135	142	150	158	167	1.87
54	74	81	88	94	130	137	145	153	161	2.01
56	71	78	84	90	126	132	140	147	155	2.16
58	69	75	82	87	121	128	135	142	149	2.32
60	67	73	79	84	117	123	130	137	144	2.48
62	64	71	76	82	114	119	126	133	140	2.65

Span in Feet	CB 331				CB 332				Deflection Inches
	125 lbs.	132 lbs.	141 lbs.	152 lbs.	200 lbs.	210 lbs.	220 lbs.	240 lbs.	
10	490								
11	467	500	524	554					.08
12	428	460	496	540					.09
13	395	424	458	499					.11
14	367	394	426	463	614	644	670	724	.12
15	342	368	397	432	595	626	658	721	.14
16	321	345	372	405	558	587	617	676	.16
17	302	325	350	382	525	553	581	636	.18
18	285	306	331	360	496	522	549	601	.20
19	270	290	314	341	470	494	520	569	.23
20	257	276	298	324	446	470	494	541	.25
21	245	263	284	309	425	447	470	515	.28
22	233	251	271	295	406	427	449	492	.30
23	223	240	259	282	388	408	429	470	.33
24	214	230	248	270	372	391	412	451	.36
25	205	221	238	259	357	376	395	433	.39
26	198	212	229	249	343	361	380	416	.42
27	190	204	221	240	331	348	366	401	.46
28	183	197	213	232	319	335	353	386	.49
29	177	190	205	224	308	324	341	373	.53
30	171	184	199	216	298	313	329	361	.56

Continued on Page 186.

See Page 8 for List of sizes carried in stock.

One KIP equals 1,000 lbs

C B SECTIONS

Allowable Uniform Load in Kips

Before using this table see Page 176

Span in Feet	CB 331 Continued				CB 332 Continued				Deflection Inches
	125 lbs.	132 lbs.	141 lbs.	152 lbs.	200 lbs.	210 lbs.	220 lbs.	240 lbs.	
32	161	172	186	203	279	294	309	338	.64
34	151	162	175	191	263	276	291	318	.73
36	143	153	166	180	248	261	274	300	.81
38	135	145	157	171	235	247	260	285	.91
40	128	138	149	162	223	235	247	270	1.00
42	122	131	142	154	213	224	235	258	1.11
44	117	125	135	147	203	213	224	246	1.21
46	112	120	130	141	194	204	215	235	1.33
48	107	115	124	135	186	196	206	225	1.45
50	103	110	119	130	179	188	198	216	1.57
52	99	106	115	125	172	181	190	208	1.70
54	95	102	110	120	165	174	183	200	1.83
56	92	99	106	116	159	168	176	193	1.97
58	89	95	103	112	154	162	170	187	2.11
60	86	92	99	108	149	157	165	180	2.26
62	83	89	96	105	144	152	159	175	2.41
64	80	86	93	101	140	147	154	169	2.57
66	78	84	90	98	135	142	150	164	2.73
68	76	81	88	95	131	138	145	159	2.90

Span in Feet	CB 361					CB 362						Deflection Inches
	150 lbs.	160 lbs.	170 lbs.	182 lbs.	194 lbs.	230 lbs.	240 lbs.	250 lbs.	260 lbs.	280 lbs.	300 lbs.	
11	582	612										
12	559	601	640	684	730							.08
13	516	555	594	637	681							.10
14	479	515	552	592	632							.11
15	447	481	515	552	590	714	740	766	796			.13
16	419	451	483	518	553	696	728	760	793	840	902	.15
17	394	424	454	487	521	655	685	715	746	809	867	.17
18	373	401	429	460	492	619	647	675	705	764	819	.19
19	353	380	406	436	466	586	613	640	668	724	776	.21
20	335	361	386	414	442	557	582	608	634	688	737	.23
21	319	344	368	394	421	531	555	579	604	655	702	.25
22	305	328	351	377	402	506	530	553	577	625	670	.28
23	292	314	336	360	385	484	506	529	551	598	641	.30
24	279	301	322	345	369	464	485	507	528	573	614	.33
25	268	289	309	331	354	446	466	486	507	550	589	.36
26	258	277	297	319	340	428	448	468	488	529	567	.39
27	248	267	286	307	328	413	431	450	470	509	546	.42
28	240	258	276	296	316	398	416	434	453	491	526	.45
29	231	249	266	286	305	384	402	419	437	474	508	.48
30	224	240	257	276	295	371	388	405	423	458	491	.52
32	210	225	241	259	277	348	364	380	396	430	461	.59
34	197	212	227	244	260	328	343	358	373	404	433	.66
36	186	200	215	230	246	310	324	338	352	382	409	.75
38	177	190	203	218	233	293	307	320	334	362	388	.83
40	168	180	193	207	221	279	291	304	317	344	368	.92
42	160	172	184	197	211	265	277	290	302	327	351	1.01
44	152	164	176	188	201	253	265	276	288	313	335	1.11
46	146	157	168	180	192	242	253	264	276	299	320	1.22
48	140	150	161	173	184	232	243	253	264	287	307	1.32
50	134	144	154	166	177	223	233	243	254	275	295	1.44
52	129	139	149	159	170	214	224	234	244	264	283	1.55
54	124	134	143	153	164	206	216	225	235	255	273	1.68
56	120	129	138	148	158	199	208	217	227	246	263	1.80
58	116	124	133	143	153	192	201	210	219	237	254	1.93
60	112	120	129	138	148	186	194	203	211	229	246	2.07
62	108	116	125	134	143	180	188	196	205	222	238	2.21
64	105	113	121	129	138	174	182	190	198	215	230	2.35
66	102	109	117	126	134	169	177	184	192	208	223	2.50
68	99	106	114	122	130	164	171	179	187	202	217	2.66
70	96	103	110	118	126	159	166	174	181	196	211	2.82
72	93	100	107	115	123	155	162	169	176	191	205	2.98

See Page 8 for List of sizes carried in stock.

One KIP equals 1,000 lbs.

STANDARD "I" BEAMS

Allowable Uniform Loads in Kips

Before using this table see Page 176

Span in Feet	3"			Deflection Inches	4"				Deflection Inches	5"			Deflection Inches
	5.7 lbs.	6.5 lbs.	7.5 lbs.		7.7 lbs.	8.5 lbs.	9.5 lbs.	10.5 lb.s		10.0 lbs.	12.25 lbs.	14.75 lbs.	
2										27			
3	7.6	8.0	8.4	.06	13.3	14.2	14.7	15.6	.05	21	24	27	.04
4	5.7	6.0	6.3	.11	10.0	10.7	11.0	11.7	.08	16.0	18.0	20	.07
5	4.5	4.8	5.1	.17	8.0	8.5	8.8	9.3	.13	12.8	14.4	16.0	.10
6	3.8	4.0	4.2	.25	6.7	7.1	7.3	7.8	.19	10.7	12.0	13.3	.15
7	3.2	3.4	3.6	.34	5.7	6.1	6.3	6.7	.25	9.1	10.3	11.4	.20
8					5.0	5.3	5.5	5.8	.33	8.0	9.0	10.0	.27
9					4.4	4.7	4.9	5.2	.42	7.1	8.0	8.9	.34
10										6.4	7.2	8.0	.41
11										5.8	6.5	7.3	.50

Span in Feet	6"			Deflection Inches	7"			Deflection Inches	8"				Deflection Inches
	12.5 lbs.	14.75 lbs.	17.25 lbs.		15.3 lbs.	17.5 lbs.	20.0 lbs.		18.4 lbs.	20.5 lbs.	23.0 lbs.	25.5 lbs.	
2	36	54				62	82			72	92	110	
3	32	35	39	.03	46	49	53	.03	56	67	71	76	.02
4	24	26	29	.06	35	37	40	.05	47	50	53	57	.04
5	19.5	21	23	.09	28	30	32	.07	38	40	43	45	.07
6	16.2	17.6	19.3	.12	23	25	27	.11	32	34	36	38	.09
7	13.9	15.0	16.6	.17	19.8	21	23	.15	27	29	31	32	.13
8	12.2	13.2	14.5	.22	17.3	18.5	20	.19	24	25	27	28	.17
9	10.8	11.7	12.9	.28	15.4	16.4	17.8	.24	21	22	24	25	.21
10	9.7	10.5	11.6	.35	13.9	14.8	16.0	.30	18.9	20	21	23	.26
11	8.8	9.6	10.5	.42	12.6	13.5	14.5	.36	17.2	18.3	19.4	21	.31
12	8.1	8.8	9.7	.50	11.6	12.3	13.3	.43	15.8	16.8	17.8	18.9	.37
13	7.5	8.1	8.9	.58	10.7	11.4	12.3	.50	14.6	15.5	16.4	17.4	.44
14					9.9	10.6	11.4	.58	13.5	14.4	15.2	16.2	.51
15					9.2	9.9	10.7	.67	12.6	13.4	14.2	15.1	.58
16									11.8	12.6	13.3	14.2	.66
17									11.1	11.8	12.5	13.3	.75

Span in Feet	10"				Deflection Inches	12"						Deflection Inches
	25.4 lbs.	30 lbs.	35 lbs.	40 lbs.		31.8 lbs.	35 lbs.	40.8 lbs.	45 lbs.	50 lbs.	55 lbs.	
2			154	192							252	
3		116	130	140	.02		134		176	214	236	.02
4	80	89	97	105	.03	110	126	144	158	168	177	.03
5	65	71	78	84	.05	96	101	120	126	134	142	.04
6	54	59	65	70	.07	80	84	100	105	112	118	.06
7	47	51	56	60	.10	69	72	85	90	96	101	.08
8	41	45	49	53	.13	60	63	75	79	84	89	.11
9	36	40	43	47	.17	53	56	66	70	75	79	.14
10	33	36	39	42	.21	48	50	60	63	67	71	.17
11	30	32	35	38	.25	44	46	54	57	61	65	.21
12	27	30	32	35	.30	40	42	50	53	56	59	.25
13	25	27	30	32	.35	37	39	46	49	52	55	.29
14	23	25	28	30	.41	34	36	43	45	48	51	.34
15	22	24	26	28	.47	32	34	40	42	45	47	.39
16	20	22	24	26	.53	30	32	37	39	42	44	.44
17	19.1	21	23	25	.60	28	30	35	37	40	42	.50
18	18.1	19.8	22	23	.67	27	28	33	35	37	39	.56
19	17.1	18.7	21	22	.75	25	27	31	33	35	37	.62
20	16.3	17.8	19.5	21	.83	24	25	30	32	34	36	.69
21	15.5	17.0	18.5	20	.91	23	24	28	30	32	34	.76
22						22	23	27	29	31	32	.83
23						21	22	26	27	29	31	.91
24						20	21	25	26	28	30	.99
25						19.2	20	24	25	27	28	1.08

See Page 9 for List of sizes carried in stock.

One KIP equals 1,000 lbs.

COLOR CODE
AISI & SAE SPECIFICATIONS
AVERAGE PHYSICAL PROPERTIES
TOLERANCES — CUTTING EXTRAS
EFERENCE
BLES
ATA

STANDARD "I" BEAMS

Allowable Uniform Load in Kips

Before using this table see Page 176

Span in Feet	15"							Deflection Inches
	42.9 lbs.	50 lbs.	55 lbs.	60.8 lbs.	65 lbs.	70 lbs.	75 lbs.	
3			252			300	338	
4	160	214	226	230	262	293	305	.02
5	157	171	181	217	225	234	244	.03
6	131	143	151	180	187	195	204	.05
7	112	122	129	155	161	167	175	.07
8	98	107	113	135	141	147	153	.09
9	87	95	100	120	125	130	136	.11
10	79	86	90	108	112	117	122	.14
11	71	78	82	98	102	107	111	.17
12	65	71	75	90	94	98	102	.20
13	60	66	70	83	87	90	94	.23
14	56	61	65	77	80	84	87	.27
15	52	57	60	72	75	78	81	.31
16	49	54	57	68	70	73	76	.35
17	46	50	53	64	66	69	72	.40
18	44	48	50	60	62	65	68	.45
19	41	45	48	57	59	62	64	.50
20	39	43	45	54	56	59	61	.55
21	37	41	43	52	54	56	58	.61
22	36	39	41	49	51	53	56	.67
23	34	37	39	47	49	51	53	.73
24	33	36	38	45	47	49	51	.79
25	31	34	36	43	45	47	49	.86
26	30	33	35	42	43	45	47	.93
27	29	32	34	40	42	43	45	1.01
28	28	31	32	39	40	42	44	1.08
29	27	30	31	37	39	40	42	1.16
30	26	29	30	36	38	39	41	1.24
31	25	28	29	35	36	38	39	1.33
32	25	27	28	34	35	37	38	1.41

Span in Feet	18"				Deflection Inches	20"					Deflection Inches
	54.7 lbs.	60 lbs.	65 lbs.	70 lbs.		65.4 lbs.	70 lbs.	75 lbs.	81.4 lbs.	100 lbs.	
4		256	294	332						454	
5	216	248	260	272	.03		294	334		440	.03
6	196	207	217	226	.04	260	270	281	312	366	.04
7	168	177	186	194	.06	223	231	241	279	314	.05
8	147	155	163	170	.07	195	202	211	244	275	.07
9	131	138	144	151	.09	173	180	187	217	244	.08
10	118	124	130	136	.12	156	162	169	196	220	.10
11	107	113	118	124	.14	142	147	153	178	200	.13
12	98	103	108	113	.17	130	135	140	163	183	.15
13	91	96	100	105	.19	120	125	130	150	169	.18
14	84	89	93	97	.23	111	116	120	140	157	.20
15	79	83	87	91	.26	104	108	112	130	147	.23
16	74	78	81	85	.29	97	101	105	122	137	.27
17	69	73	77	80	.33	92	95	99	115	129	.30
18	66	69	72	76	.37	87	90	94	109	122	.34
19	62	65	68	72	.42	82	85	89	103	116	.37
20	59	62	65	68	.46	78	81	84	98	110	.41
21	56	59	62	65	.51	74	77	80	93	105	.46
22	54	56	59	62	.56	71	74	77	89	100	.50
23	51	54	57	59	.61	68	70	73	85	96	.55
24	49	52	54	57	.66	65	67	70	82	92	.60
25	47	50	52	54	.72	62	65	67	78	88	.65
26	45	48	50	52	.78	60	62	65	75	85	.70
27	44	46	48	50	.84	58	60	62	72	81	.75
28	42	44	46	49	.90	56	58	60	70	79	.81
29	41	43	45	47	.97	54	56	58	67	76	.87
30	39	41	43	45	1.03	52	54	56	65	73	.93
31	38	40	42	44	1.11	50	52	54	63	71	.99
32	37	39	41	43	1.18	49	51	53	61	69	1.06
33	36	38	39	41	1.25	47	49	51	59	67	1.13
34	35	37	38	40	1.33	46	48	50	58	65	1.20
35	34	36	37	39	1.41	45	46	48	56	63	1.27
36	33	35	36	38	1.49	43	45	47	54	61	1.34
37	32	34	35	37	1.57	42	44	46	53	59	1.42
38	31	33	34	36	1.66	41	43	44	51	58	1.49
39						40	42	43	50	56	1.57
40						39	41	42	49	55	1.66
41						38	40	41	48	54	1.74
42						37	39	40	47	52	1.83

See Page 9 for List of sizes carried in stock.

One KIP equals 1,000 lbs.

STANDARD "I" BEAMS

Allowable Uniform Load in Kips

Before using this table see Page 176

Span in Feet	24"							Deflection Inches
	79.9 lbs.	85 lbs.	90 lbs.	95 lbs.	100 lbs.	105.9 lbs.	115 lbs.	
5				428	466			
6		352	390	426	439			.03
7	312	343	354	365	376		460	.04
8	290	300	310	320	329	390	408	.06
9	258	267	275	284	293	347	363	.07
10	232	240	248	256	264	312	327	.09
11	211	218	225	233	240	284	297	.10
12	193	200	206	213	220	260	272	.12
13	178	185	191	197	203	240	251	.15
14	166	171	177	183	188	223	233	.17
15	155	160	165	171	176	208	218	.19
16	145	150	155	160	165	195	204	.22
17	136	141	146	150	155	184	192	.25
18	129	133	138	142	146	174	182	.28
19	122	126	130	135	139	164	172	.31
20	116	120	124	128	132	156	163	.35
21	110	114	118	122	126	149	156	.38
22	105	109	113	116	120	142	149	.42
23	101	104	108	111	115	136	142	.46
24	97	100	103	107	110	130	136	.50
25	93	96	99	102	105	125	131	.54
26	89	92	95	98	101	120	126	.58
27	86	89	92	95	98	116	121	.63
28	83	86	89	91	94	112	117	.68
29	80	83	85	88	91	108	113	.73
30	77	80	83	85	88	104	109	.78
31	75	77	80	83	85	101	105	.83
32	73	75	77	80	82	98	102	.88
33	70	73	75	78	80	95	99	.94
34	68	71	73	75	78	92	96	1.00
35	66	69	71	73	75	89	93	1.06
36	64	67	69	71	73	87	91	1.12
37	63	65	67	69	71	84	88	1.18
38	61	63	65	67	69	82	86	1.25
39	60	62	64	66	68	80	84	1.31
40	58	60	62	64	66	78	82	1.38
42	55	57	59	61	63	74	78	1.52
44	53	55	56	58	60	71	74	1.67
46	50	52	54	56	57	68	71	1.82
48	48	50	52	53	55	65	68	1.99
50	46	48	50	51	53	63	65	2.16

See Page 9 for List of sizes carried in stock.

One KIP equals 1,000 lbs.

FOR STOCKS OF

C. B. Sections

"I" Beams

"H" Beams

Channels,

See Pages 6 to 10, Inclusive

COLOR CODE
AISI & SAE SPECIFICATIONS
AVERAGE PHYSICAL PROPERTIES
TOLERANCES — CUTTING EXTRAS
FERENCE
BLES
ATA

CHANNELS

Allowable Uniform Loads in Kips

Before using this table see Page 176

Span in Feet	3″			Deflection Inches	4″			Deflection Inches	5″			Deflection Inches
	4.1 lbs.	5.0 lbs.	6.0 lbs.		5.4 lbs.	6.25 lbs.	7.25 lbs.		6.7 lbs.	9.0 lbs.	11.5 lbs.	
3	4.9	5.3	6.2	.06	8.4	9.3	10.2	.05	13.3	15.6	18.2	.04
4	3.7	4.0	4.7	.11	6.3	7.0	7.7	.08	10.0	11.7	13.7	.07
5	2.9	3.2	3.7	.17	5.1	5.6	6.1	.13	8.0	9.3	10.9	.10
6	2.4	2.7	3.1	.25	4.2	4.7	5.1	.19	6.7	7.8	9.1	.15
7	2.1	2.3	2.7	.34	3.6	4.0	4.4	.25	5.7	6.7	7.8	.20
8	1.8	2.0	2.3	.44	3.2	3.5	3.8	.33	5.0	5.8	6.8	.27
9					2.8	3.1	3.4	.42	4.4	5.2	6.1	.34
10					2.5	2.8	3.1	.52	4.0	4.7	5.5	.41
11									3.6	4.2	5.0	.50
12									3.3	3.9	4.6	.60
13									3.1	3.6	4.2	.70

Span in Feet	6″				Deflection Inches	7″					Deflection Inches
	8.2 lbs.	10.5 lbs.	13.0 lbs.	15.5 lbs.		9.8 lbs.	12.25 lbs.	14.75 lbs.	17.25 lbs.	19.75 lbs.	
2						38					
3	19.1	22	26	29	.03	27	31	34	38	42	.03
4	14.3	16.7	19.3	22	.06	20	23	26	29	31	.05
5	11.5	13.3	15.5	17.3	.09	16.0	18.4	21	23	25	.07
6	9.6	11.1	12.9	14.4	.12	13.3	15.3	17.1	19.1	21	.11
7	8.2	9.5	11.0	12.4	.17	11.4	13.1	14.7	16.4	17.9	.15
8	7.2	8.3	9.7	10.8	.22	10.0	11.5	12.8	14.3	15.7	.19
9	6.4	7.4	8.6	9.6	.28	8.9	10.2	11.4	12.7	13.9	.24
10	5.7	6.7	7.7	8.7	.35	8.0	9.2	10.3	11.5	12.5	.30
11	5.2	6.1	7.0	7.9	.42	7.3	8.4	9.3	10.4	11.4	.36
12	4.8	5.6	6.4	7.2	.50	6.7	7.7	8.6	9.6	10.4	.43
13	4.4	5.1	5.9	6.7	.58	6.2	7.1	7.9	8.8	9.6	.50
14	4.1	4.8	5.5	6.2	.68	5.7	6.6	7.3	8.2	9.0	.58
15	3.8	4.4	5.2	5.8	.78	5.3	6.1	6.8	7.6	8.4	.67
16						5.0	5.7	6.4	7.2	7.8	.76
17						.47	5.4	6.0	6.7	7.4	.85
18						4.4	5.1	5.7	6.4	7.0	.96

Span in Feet	8″					Deflection Inches	9″				Deflection Inches
	11.5 lbs.	13.75 lbs.	16.25 lbs.	18.75 lbs.	21.25 lbs.		13.4 lbs.	15 lbs.	20 lbs.	25 lbs.	
2	46						54	66			
3	36	40	44	48	53	.02	47	50	60	70	.02
4	27	30	33	36	40	.04	35	38	45	52	.04
5	22	24	26	29	32	.07	28	30	36	42	.06
6	18.0	20	22	24	26	.09	23	25	30	35	.08
7	15.4	17.1	18.9	21	23	.13	20	22	26	30	.11
8	13.5	15.0	16.5	18.2	19.8	.17	17.5	18.8	23	26	.15
9	12.0	13.3	14.7	16.1	17.6	.21	15.6	16.7	20	23	.19
10	10.8	12.0	13.2	14.5	15.9	.26	14.0	15.1	18.0	21	.23
11	9.8	10.9	12.0	13.2	14.4	.31	12.7	13.7	16.4	19.0	.28
12	9.0	10.0	11.0	12.1	13.2	.37	11.7	12.6	15.0	17.4	.33
13	8.3	9.2	10.2	11.2	12.2	.44	10.8	11.6	13.8	16.1	.39
14	7.7	8.6	9.4	10.4	11.3	.51	10.0	10.8	12.9	15.0	.45
15	7.2	8.0	8.8	9.7	10.6	.58	9.3	10.0	12.0	14.0	.52
16	6.7	7.5	8.2	9.1	9.9	.66	8.7	9.4	11.2	13.1	.59
17	6.4	7.1	7.8	8.5	9.3	.75	8.2	8.9	10.6	12.3	.66
18	6.0	6.7	7.3	8.1	8.8	.84	7.8	8.4	10.0	11.6	.75
19	5.7	6.3	6.9	7.6	8.4	.93	7.4	7.9	9.5	11.0	.83
20	5.4	6.0	6.6	7.3	7.9	1.04	7.0	7.5	9.0	10.5	.92
21							6.7	7.2	8.6	10.0	1.01
22							6.4	6.8	8.2	9.5	1.11
23							6.1	6.6	7.8	9.1	1.22

See Page 10 for List of sizes carried in stock.

One KIP equals 1,000 lbs.

CHANNELS

Allowable Uniform Loads in Kips

Before using this table see Page 176

Span in Feet	10″					Deflection Inches	12″					Deflection Inches
	15.3 lbs.	20 lbs.	25 lbs.	30 lbs.	35 lbs.		20.7 lbs.	25 lbs.	30 lbs.	35 lbs.	40 lbs.	
2	62	98						120	160	198		
3	60	70	80	92	102	.02	88	106	120	132	146	.02
4	45	52	60	69	77	.03	71	80	90	99	109	.03
5	36	42	48	55	61	.05	57	64	72	80	88	.04
6	30	35	40	46	51	.07	48	53	60	66	73	.06
7	26	30	35	39	44	.10	41	46	51	57	63	.08
8	22	26	30	34	38	.13	36	40	45	50	55	.11
9	19.9	23	27	31	34	.17	32	35	40	44	49	.14
10	17.9	21	24	28	31	.21	29	32	36	40	44	.17
11	16.2	19.0	22	25	28	.25	26	29	33	36	40	.21
12	14.9	17.4	20	23	26	.30	24	27	30	33	36	.25
13	13.7	16.1	18.6	21	24	.35	22	25	28	31	34	.29
14	12.8	15.0	17.2	19.6	22	.41	20	23	26	28	31	.34
15	11.9	14.0	16.1	18.3	20	.47	19.0	21	24	27	29	.39
16	11.2	13.1	15.1	17.2	19.2	.53	17.8	19.9	22	25	27	.44
17	10.5	12.3	14.2	16.2	18.0	.60	16.8	18.7	21	23	26	.50
18	9.9	11.6	13.4	15.3	17.0	.67	15.9	17.7	19.9	22	24	.56
19	9.4	11.0	12.7	14.5	16.1	.75	15.0	16.8	18.9	21	23	.62
20	8.9	10.5	12.1	13.7	15.3	.83	14.3	15.9	17.9	19.9	22	.69
21	8.5	10.0	11.5	13.1	14.6	.91	13.6	15.2	17.1	18.9	21	.76
22	8.1	9.5	11.0	12.5	13.9	1.00	13.0	14.5	16.3	18.1	19.9	.83
23	7.8	9.1	10.5	11.9	13.3	1.10	12.4	13.9	15.6	17.3	19.0	.91
24	7.4	8.7	10.1	11.4	12.8	1.19	11.9	13.3	14.9	16.6	18.2	.99
25	7.1	8.4	9.7	11.0	12.3	1.29	11.4	12.7	14.3	15.9	17.5	1.08
26							11.0	12.3	13.8	15.3	16.8	1.17
27							10.6	11.8	13.3	14.7	16.2	1.26
28							10.2	11.4	12.8	14.2	15.6	1.35
29							9.8	11.0	12.4	13.7	15 1	1.45
30							9.5	10.6	12.0	13.2	14.6	1.55

Span in Feet	15″ Standard Channel						Deflection Inches	18″ Ship Channel				Deflection Inches
	33.9 lbs.	35 lbs.	40 lbs.	45 lbs.	50 lbs.	55 lbs.		42.7 lbs.	45.8 lbs.	51.9 lbs.	58 lbs.	
2				242	280	318						
3	156	164	202	221	238	254	.01	210	234	280	328	
4	139	142	154	166	178	191	.02	203	212	230	248	.02
5	111	113	123	133	143	153	.03	163	170	184	199	.03
6	93	94	103	111	119	127	.05	136	142	154	166	.04
7	79	81	88	95	102	109	.07	116	121	132	142	.06
8	70	71	77	83	89	95	.09	102	106	115	124	.07
9	62	63	68	74	79	85	.11	90	94	102	110	.09
10	56	57	62	66	71	76	.14	81	85	92	99	.12
11	51	52	56	60	65	69	.17	74	77	84	90	.14
12	46	47	51	55	59	64	.20	68	71	77	83	.17
13	43	44	47	51	55	59	.23	63	65	71	76	.19
14	40	41	44	47	51	55	.27	58	61	66	71	.23
15	37	38	41	44	48	51	.31	54	57	61	66	.26
16	35	35	39	42	45	48	.35	51	53	58	62	.29
17	33	33	36	39	42	45	.40	48	50	54	58	.33
18	31	32	34	37	40	42	.45	45	47	51	55	.37
19	29	30	32	35	38	40	.50	43	45	49	52	.42
20	28	28	31	33	36	38	.55	41	43	46	50	.46
21	27	27	29	32	34	36	.61	39	40	44	47	.51
22	25	26	28	30	32	35	.67	37	39	42	45	.56
23	24	25	27	29	31	33	.73	35	37	40	43	.61
24	23	24	26	28	30	32	.79	34	35	38	41	.66
25	22	23	25	27	29	31	.86	33	34	37	40	.72
26	21	22	24	26	27	29	.93	31	33	35	38	.78
27	21	21	23	25	26	28	1.01	30	32	34	37	.84
28	19.9	20	22	24	26	27	1.08	29	30	33	36	.90
29	19.2	19.5	21	23	25	26	1.16	28	29	32	34	.97
30	18.5	18.9	21	22	24	25	1.24	27	28	31	33	1.03
31	17.9	18.3	19.9	21	23	25	1.33	26	27	30	32	1.11
32	17.4	17.7	19.3	21	22	24	1.41	25	27	29	31	1.18
33	16.8	17.2	18.7	20	22	23	1.50	25	26	28	30	1.25
34	16.4	16.7	18.1	19.5	21	22	1.60	24	25	27	29	1.33
35	15.9	16.2	17.6	19.0	20	22	1.69	23	24	26	28	1.41
36	15.4	15.7	17.1	18.4	19.8	21	1.79	23	24	26	28	1.49
37	15.0	15.3	16.7	17.9	19.3	21	1.89	22	23	25	27	1.57
38	14.6	14.9	16.2	17.5	18.7	20	1.99	21	22	24	26	1.66
39								21	22	24	25	1.75
40								20	21	23	25	1.84
42								19.4	20	22	24	2.03
44								18.5	19.3	21	23	2.23

See Page 10 for List of sizes carried in stock.

One KIP equals 1,000 lbs.

COLOR CODE
AISI & SAE SPECIFICATIONS
AVERAGE PHYSICAL PROPERTIES
TOLERANCES — CUTTING EXTRAS
EFERENCE ABLES
ATA

COLOR CODE—Hot Rolled

USED FOR IDENTIFICATION PURPOSES

ENDS OF MATERIALS ARE PAINTED AS FOLLOWS:

A.I.S.I.		S.A.E.	COLOR
A3120		3120	YELLOW AND RED
A3140		3140	YELLOW AND BLUE
A4140	(As Rolled)	4140	BLACK AND BROWN
A4140	(Heat Treated)	4140	BLACK AND WHITE
A8620		----	PURPLE AND YELLOW
A8742	(Annealed)	----	PURPLE AND GREEN
C1020		1020	RED
C1035		1035	GREEN AND BLUE
C1045		1045	BROWN AND BLUE
C1085		1085	BLACK
C1095		1095	ORANGE
C1120		----	GRAY
C1117		1117 (X1314)	WHITE AND RED
C1137		1137 (X1335)	BLUE AND RED
ASME S-5 GRADE A		----	BLUE
MILD STEEL		----	NO COLOR

We use great care in painting our bars to avoid errors and we suggest to our customers the advisability of keeping the colors on any short pieces that may accumulate in their plants, also in reordering to refer to these Color Codes. This practice will result in uniformity of quality.

COLOR CODE—Cold Finished

USED FOR IDENTIFICATION PURPOSES

ENDS OF MATERIALS ARE PAINTED AS FOLLOWS:

A.I.S.I.		S.A.E.	COLOR
A3120		3120	YELLOW AND RED
A3135	(Annealed)	3135	YELLOW, GREEN AND BLUE
A4140	(Heat Treated)	4140	BLACK AND WHITE
A8620		----	PURPLE AND YELLOW
A8742	(Annealed)	----	PURPLE AND GREEN
C1019		(X1020)	YELLOW
C1040		1040	WHITE
C1042		----	WHITE WITH BLUE STRIPE
C1045		1045	WHITE AND BLUE
B1112	(Screw Stock)	1112	ALUMINUM BRONZE
B1113		1113 (X1112)	GOLD BRONZE
C1117		1117 (X1314)	RED
C1137		1137 (X1335)	RED AND BLUE
B1112	(Accuracy Stock)	1112	BLACK
C1019	(Turned, Ground and Polished)	(X1020)	BLACK WITH WHITE LINE
C1040	(Turned, Ground and Polished)	1040	WHITE WITH BLACK LINE
C1019	(Turned and Polished)	(X1020)	YELLOW WITH WHITE STRIPE
STRESSPROOF		----	GREEN AND WHITE

Please read remarks on lower portion of page 192

COLOR CODE
AISI & SAE SPECIFICATIONS
AVERAGE PHYSICAL PROPERTIES
TOLERANCES — CUTTING EXTRAS
EFERENCE ABLES
ATA

SPECIFICATIONS
and
NUMBERING SYSTEM

A system of symbols and numbers is used to identify the grade classifications of standard steels. The capital letter prefixes indicate the steel making process. Numbers indicate grades of steel by chemical or tensile properties. Lower case letters used as suffixes indicate various special requirements affecting quality.

LETTER DESIGNATIONS

A. Designates Basic Open Hearth Alloy Steel

B. Designates Acid Bessemer Carbon Steel

C. Designates Basic Open Hearth Carbon Steel

CB. Designates either Acid Bessemer or Basic Open Hearth Carbon Steel at the option of the Manufacturer

D. Designates Acid Open Hearth Carbon Steel

E. Designates Electric Furnace Steel, both Carbon and Alloy

NUMERICAL DESIGNATIONS

A four-numeral series designates carbon and alloy steels specified to chemical composition ranges. Five numerals designate certain types of alloy steels.

The last two digits of the four-numeral series are intended, so far as feasible, to indicate the approximate middle of the carbon range; for example, 20 represents a range of 0.18 to 0.23 per cent.

It is necessary however to deviate from this rule and to interpolate numbers in the case of some carbon ranges; and for variations in manganese, phosphorus or sulphur with the same carbon ranges in carbon steels and in manganese, sulphur, chromium, or other elements in alloy steels.

The first two digits of the four-numeral series of the various grades of carbon and alloy steel and their meanings are as follows:

Series Designation	Types and Classes
10XX	Basic and acid open hearth and acid bessemer carbon steel grades nonsulphurized and nonphosphorized.
11XX	Basic open hearth and acid bessemer steel grades, sulphurized but not phosphorized.
12XX	Basic open hearth carbon steel grades, phosphorized.
13XX	Manganese 1.60 to 1.90 per cent.
23XX	Nickel 3.50 per cent.
25XX	Nickel 5.00 per cent.
30XX	Nickel 0.70 per cent, Chromium 0.70 per cent.
31XX	Nickel 1.25 per cent, Chromium 0.60 per cent.
32XX	Nickel 1.75 per cent, Chromium 1.00 per cent.
33XX	Nickel 3.50 per cent, Chromium 1.50 per cent.
40XX	Molybdenum.
41XX	Chromium-Molybdenum.
43XX	Nickel-Chromium-Molybdenum.
46XX	Nickel 1.65 per cent, Molybdenum 0.25 per cent.
48XX	Nickel 3.25 per cent, Molybdenum 0.25 per cent.
50XX	Low Chromium.
51XX	Medium Chromium.
52XXX	Chromium, high-carbon.
61XX	Chromium-Vanadium.
86XX	Nickel 0.55 per cent, Chromium 0.50 per cent, Molybdenum 0.20 per cent.
87XX	Nickel 0.55 per cent, Chromium 0.50 per cent, Molybdenum 0.25 per cent.
92XX	Manganese 0.80 per cent, Silicon 2.00 per cent.

(Courtesy of American Iron and Steel Institute)

AISI & SAE SPECIFICATIONS
AVERAGE PHYSICAL PROPERTIES
TOLERANCES — CUTTING EXTRAS
EFERENCE ABLES ATA

A. I. S. I. AND S. A. E. SPECIFICATIONS

AISI NUMBER June 1945	SAE NUMBER Jan. 1945	CHEMICAL COMPOSITION LIMITS, PER CENT			
		C	Mn	P, Max.	S, Max.
C 1006	—	0.08 max.	0.25/0.40	0.04	0.05
C 1008	1008	0.10 max.	0.30/0.50	0.04	0.05
CB 1008	—	0.10 max.	—	—	—
C 1010	1010	0.08/0.13	0.30/0.50	0.04	0.05
C 1011	—	0.08/0.13	0.40/0.60	0.04	0.05
C 1012	—	0.10/0.15	0.30/0.50	0.04	0.05
CB 1012	—	0.15 max.	—	—	—
C 1014	—	0.13/0.18	0.40/0.60	0.04	0.05
C 1015	1015	0.13/0.18	0.30/0.50	0.04	0.05
C 1016	1016	0.13/0.18	0.60/0.90	0.04	0.05
CB 1017	—	0.10/0.25	—	—	—
C 1017	—	0.15/0.20	0.40/0.60	0.04	0.05
C 1018	—	0.15/0.20	0.60/0.90	0.04	0.05
C 1019	—	0.15/0.20	0.70/1.00	0.04	0.05
C 1020	1020	0.18/0.23	0.30/0.50	0.04	0.05
C 1021	—	0.18/0.23	0.40/0.60	0.04	0.05
C 1022	1022	0.18/0.23	0.70/1.00	0.04	0.05
C 1023	—	0.20/0.25	0.30/0.50	0.04	0.05
C 1024	1024	0.20/0.26	1.35/1.65	0.04	0.05
C 1025	1025	0.22/0.28	0.30/0.50	0.04	0.05
C 1026	—	0.22/0.28	0.40/0.60	0.04	0.05
C 1029	—	0.25/0.31	0.60/0.90	0.04	0.05
C 1030	1030	0.28/0.34	0.60/0.90	0.04	0.05
CB 1032	—	0.25/0.40	—	—	—
C 1033	—	0.30/0.36	0.60/0.90	0.04	0.05
C 1035	1035	0.32/0.38	0.60/0.90	0.04	0.05

See notes on page 197.

A. I. S. I. AND S. A. E. SPECIFICATIONS

AISI NUMBER June 1945	SAE NUMBER Jan., 1945	C	Mn	P, Max.	S, Max.
		CHEMICAL COMPOSITION LIMITS, PER CENT			
C 1036	1036	0.32/0.39	1.20/1.50	0.04	0.05
C 1040	1040	0.37/0.44	0.60/0.90	0.04	0.05
C 1042	—	0.40/0.47	0.60/0.90	0.04	0.05
C 1043	—	0.40/0.47	0.70/1.00	0.04	0.05
C 1045	1045	0.43/0.50	0.60/0.90	0.04	0.05
C 1050	1050	0.48/0.55	0.60/0.90	0.04	0.05
C 1052	1052	0.47/0.55	1.20/1.50	0.04	0.05
C 1055	1055	0.50/0.60	0.60/0.90	0.04	0.05
C 1060	1060	0.55/0.65	0.60/0.90	0.04	0.05
C 1061	—	0.54/0.65	0.75/1.05	0.04	0.05
C 1064	—	0.60/0.70	0.50/0.70	0.04	0.05
C 1066	1066	0.60/0.71	0.80/1.10	0.04	0.05
C 1068	—	0.65/0.75	0.50 max.	0.04	0.05
C 1070	1070	0.65/0.75	0.70/1.00	0.04	0.05
C 1074	—	0.70/0.80	0.50/0.70	0.04	0.05
C 1078	—	0.72/0.85	0.30/0.50	0.04	0.05
C 1080	1080	0.75/0.88	0.60/0.90	0.04	0.05
C 1085	1085	0.80/0.93	0.70/1.00	0.04	0.05
C 1086	—	0.82/0.95	0.30/0.50	0.04	0.05
C 1095	1095	0.90/1.05	0.30/0.50	0.04	0.05
B 1008	—	0.10 max.	0.30/0.50	0.11	0.06
B 1010	—	0.07/0.13	0.30/0.50	0.07/0.11	0.07
B 1011	—	0.13 max.	0.50/0.70	0.11	0.06

When silicon is specified in standard basic open-hearth steels, silicon may be ordered only as 0.10 per cent maximum; 0.10 to 0.20 per cent; or 0.15 to 0,30 per cent. In the case of many grades of basic open-hearth steel, special practice is necessary in order to comply with a specification including silicon. Acid bessemer steel is not furnished with specified silicon content.

A. I. S. I. AND S. A. E. SPECIFICATIONS

AISI NUMBER June, 1945	SAE NUMBER January, 1945	CHEMICAL COMPOSITION LIMITS, PER CENT			
		C	Mn	P, Max.	S, Max.
B 1110	—	0.13 max.	0.60 max.	0.11 max.	0.045/0.075
B 1111	1111	0.08/0.13	0.60/0.90	0.09/0.13	0.10/0.15
B 1112	1112	0.08/0.13	0.60/0.90	0.09/0.13	0.16/0.23
B 1113	1113	0.08/0.13	0.60/0.90	0.09/0.13	0.24/0.33
C 1109	—	0.08/0.13	0.60/0.90	0.045	0.08/0.13
C 1110	—	0.08/0.13	0.60/0.90	0.045	0.10/0.15
C 1112	—	0.10/0.16	1.00/1.30	0.045	0.08/0.13
C 1113	—	0.10/0.16	1.00/1.30	0.045	0.24/0.33
C 1115	1115	0.13/0.18	0.70/1.00	0.045	0.10/0.15
C 1116	—	0.14/0.20	1.10/1.40	0.045	0.16/0.23
C 1117	1117	0.14/0.20	1.00/1.30	0.045	0.08/0.13
C 1118	1118	0.14/0.20	1.30/1.60	0.045	0.08/0.13
C 1120	—	0.18/0.23	0.60/0.90	0.045	0.08/0.13
C 1121	—	0.18/0.23	0.70/1.00	0.045	0.08/0.13
C 1122	—	0.17/0.23	1.35/1.65	0.045	0.08/0.13
C 1132	1132	0.27/0.34	1.35/1.65	0.045	0.08/0.13
C 1137	1137	0.32/0.39	1.35/1.65	0.045	0.08/0.13
C 1141	1141	0.37/0.45	1.35/1.65	0.045	0.08/0.13
C 1144	—	0.40/0.48	1.35/1.65	0.045	0.24/0.33
C 1217	—	0.14/0.19	0.70/1.00	0.09/0.13	0.20/0.29

Sulphurized or phosphorized steels are not subject to check analysis for sulphur or phosphorus.

Acid bessemer steel is not furnished with specified silicon content.

A. I. S. I. AND S. A. E. SPECIFICATIONS

CHEMICAL COMPOSITION LIMITS, PER CENT

AISI NUMBER June 1945	SAE NUMBER Jan. 1945	C	Mn	P. Max.	S. Max.	Si	Ni	Cr
A 1330	1330	0.28/0.33	1.60/1.90	0.04	0.04	0.20/0.35		
A 1335	1335	0.33/0.38	1.60/1.90	0.04	0.04	0.20/0.35		
A 1340	1340	0.38/0.43	1.60/1.90	0.04	0.04	0.20/0.35		
A 1345	—	0.43/0.48	1.60/1.90	0.04	0.04	0.20/0.35		
A 1350	—	0.48/0.53	1.60/1.90	0.04	0.04	0.20/0.35		
A 2317	2317	0.15/0.20	0.40/0.60	0.04	0.04	0.20/0.35	3.25/3.75	
A 2330	2330	0.28/0.33	0.60/0.80	0.04	0.04	0.20/0.35	3.25/3.75	
A 2335	—	0.33/0.38	0.60/0.80	0.04	0.04	0.20/0.35	3.25/3.75	
A 2340	2340	0.38/0.43	0.70/0.90	0.04	0.04	0.20/0.35	3.25/3.75	
A 2345	2345	0.43/0.48	0.70/0.90	0.04	0.04	0.20/0.35	3.25/3.75	
E 2512	—	0.09/0.14	0.45/0.60	0.025	0.025	0.20/0.35	4.75/5.25	
A 2515	2515	0.12/0.17	0.40/0.60	0.04	0.04	0.20/0.35	4.75/5.25	
E 2517	—	0.15/0.20	0.45/0.60	0.025	0.025	0.20/0.35	4.75/5.25	
A 3115	3115	0.13/0.18	0.40/0.60	0.04	0.04	0.20/0.35	1.10/1.40	0.55/0.75
A 3120	3120	0.17/0.22	0.60/0.80	0.04	0.04	0.20/0.35	1.10/1.40	0.55/0.75
A 3130	3130	0.28/0.33	0.60/0.80	0.04	0.04	0.20/0.35	1.10/1.40	0.55/0.75
A 3135	3135	0.33/0.38	0.60/0.80	0.04	0.04	0.20/0.35	1.10/1.40	0.55/0.75
A 3140	3140	0.38/0.43	0.70/0.90	0.04	0.04	0.20/0.35	1.10/1.40	0.55/0.75
A 3141	3141	0.38/0.43	0.70/0.90	0.04	0.04	0.20/0.35	1.10/1.40	0.70/0.90
A 3145	3145	0.43/0.48	0.70/0.90	0.04	0.04	0.20/0.35	1.10/1.40	0.70/0.90
A 3150	3150	0.48/0.53	0.70/0.90	0.04	0.04	0.20/0.35	1.10/1.40	0.70/0.90
A 3240	3240	0.38/0.43	0.40/0.60	0.04	0.04	0.20/0.35	1.65/2.00	0.90/1.20
E 3310	3310	0.08/0.13	0.45/0.60	0.025	0.025	0.20/0.35	3.25/3.75	1.40/1.75
E 3316	—	0.14/0.19	0.45/0.60	0.025	0.025	0.20/0.35	3.25/3.75	1.40/1.75

See notes on page 205.

AVERAGE PHYSICAL PROPERTIES
TOLERANCES — CUTTING EXTRAS
EFERENCE ABLES
ATA

A. I. S. I. AND S. A. E. SPECIFICATIONS

AISI NUMBER June. 1945	SAE NUMBER Jan., 1945	CHEMICAL COMPOSITION LIMITS, PER CENT							
		C	Mn	P, Max.	S, Max.	Si	Ni	Cr	Mo
A 4023	4023	0.20/0.25	0.70/0.90	0.04	0.04	0.20/0.35	—	—	0.20/0.30
A 4024	—	0.20/0.25	0.70/0.90	0.04	0.035/0.05	0.20/0.35	—	—	0.20/0.30
A 4027	4027	0.25/0.30	0.70/0.90	0.04	0.04	0.20/0.35	—	—	0.20/0.30
A 4028	—	0.25/0.30	0.70/0.90	0.04	0.035/0.05	0.20/0.35	—	—	0.20/0.30
A 4032	4032	0.30/0.35	0.70/0.90	0.04	0.04	0.20/0.35	—	—	0.20/0.30
A 4037	4037	0.35/0.40	0.75/1.00	0.04	0.04	0.20/0.35	—	—	0.20/0.30
A 4042	4042	0.40/0.45	0.75/1.00	0.04	0.04	0.20/0.35	—	—	0.20/0.30
A 4047	4047	0.45/0.50	0.75/1.00	0.04	0.04	0.20/0.35	—	—	0.20/0.30
A 4063	4063	0.60/0.67	0.75/1.00	0.04	0.04	0.20/0.35	—	—	0.20/0.30
A 4068	4068	0.64/0.72	0.75/1.00	0.04	0.04	0.20/0.35	—	—	0.20/0.30
A 4119	4119	0.17/0.22	0.70/0.90	0.04	0.04	0.20/0.35	—	0.40/0.60	0.20/0.30
A 4120	—	0.17/0.22	0.70/0.90	0.04	0.04	0.20/0.35	—	0.60/0.80	0.20/0.30
A 4125	4125	0.23/0.28	0.70/0.90	0.04	0.04	0.20/0.35	—	0.40/0.60	0.20/0.30
A 4130	4130	0.28/0.33	0.40/0.60	0.04	0.04	0.20/0.35	—	0.80/1.10	0.15/0.25
A 4131	—	0.28/0.33	0.50/0.70	0.04	0.04	0.20/0.35	—	0.80/1.10	0.14/0.19
E 4132	—	0.30/0.35	0.40/0.60	0.025	0.025	0.20/0.35	—	0.80/1.10	0.18/0.25
A 4134	—	0.32/0.37	0.40/0.60	0.04	0.04	0.20/0.35	—	0.80/1.10	0.15/0.25
E 4135	—	0.33/0.38	0.70/0.90	0.025	0.025	0.20/0.35	—	0.80/1.10	0.18/0.25
A 4137	4137	0.35/0.40	0.70/0.90	0.04	0.04	0.20/0.35	—	0.80/1.10	0.15/0.25
E 4137	—	0.35/0.40	0.70/0.90	0.025	0.025	0.20/0.35	—	0.80/1.10	0.18/0.25
A 4140	4140	0.38/0.43	0.75/1.00	0.04	0.04	0.20/0.35	—	0.80/1.10	0.15/0.25
A 4141	—	0.38/0.43	0.75/1.00	0.04	0.04	0.20/0.35	—	0.80/1.10	0.14/0.19
A 4142	—	0.40/0.45	0.75/1.00	0.04	0.04	0.20/0.35	—	0.80/1.10	0.15/0.25
A 4143	—	0.40/0.45	0.75/1.00	0.04	0.04	0.20/0.35	—	0.80/1.10	0.30/0.40

See notes on page 205.

Continued on next page

A. I. S. I. AND S. A. E. SPECIFICATIONS

CHEMICAL COMPOSITION LIMITS, PER CENT

AISI NUMBER June 1945	SAE NUMBER Jan. 1945	C	Mn	P, Max.	S, Max.	Si	Ni	Cr	Mo
A 4145	4145	0.43/0.48	0.75/1.00	0.04	0.04	0.20/0.35	—	0.80/1.10	0.15/0.25
A 4147	—	0.45/0.50	0.75/1.00	0.04	0.04	0.20/0.35	—	0.80/1.10	0.15/0.25
A 4150	4150	0.48/0.53	0.75/1.00	0.04	0.04	0.20/0.35	—	0.80/1.10	0.15/0.25
E 4150	—	0.48/0.53	0.70/0.90	0.025	0.025	0.20/0.35	—	0.80/1.10	0.20/0.27
A 4317	—	0.15/0.20	0.45/0.65	0.04	0.04	0.20/0.35	1.65/2.00	0.40/0.60	0.20/0.30
A 4320	4320	0.17/0.22	0.45/0.65	0.04	0.04	0.20/0.35	1.65/2.00	0.40/0.60	0.20/0.30
A 4337	—	0.35/0.40	0.60/0.80	0.04	0.04	0.20/0.35	1.65/2.00	0.60/0.80	0.30/0.40
E 4337	—	0.35/0.40	0.60/0.80	0.025	0.025	0.20/0.35	1.65/2.00	0.70/0.90	0.23/0.30
A 4340	4340	0.38/0.43	0.60/0.80	0.04	0.04	0.20/0.35	1.65/2.00	0.70/0.90	0.20/0.30
E 4342	—	0.40/0.45	0.60/0.80	0.025	0.025	0.20/0.35	1.65/2.00	0.70/0.90	0.23/0.30
A 4608	—	0.06/0.11	0.40 max.	0.04	0.04	0.25 max.	1.40/1.75	—	0.15/0.25
A 4615	4615	0.13/0.18	0.45/0.65	0.04	0.04	0.20/0.35	1.65/2.00	—	0.20/0.30
E 4617	—	0.15/0.20	0.45/0.65	0.025	0.025	0.20/0.35	1.65/2.00	—	0.20/0.27
A 4620	4620	0.17/0.22	0.45/0.65	0.04	0.04	0.20/0.35	1.65/2.00	—	0.20/0.30
E 4620	—	0.17/0.22	0.45/0.65	0.025	0.025	0.20/0.35	1.65/2.00	—	0.20/0.27
A 4621	—	0.18/0.23	0.70/0.90	0.04	0.04	0.20/0.35	1.65/2.00	—	0.20/0.30
A 4640	4640	0.38/0.43	0.60/0.80	0.04	0.04	0.20/0.35	1.65/2.00	—	0.20/0.30
E 4640	—	0.38/0.43	0.60/0.80	0.025	0.025	0.20/0.35	1.65/2.00	—	0.20/0.27
A 4645	—	0.43/0.48	0.60/0.80	0.04	0.04	0.20/0.35	1.65/2.00	—	0.20/0.30
A 4815	4815	0.13/0.18	0.40/0.60	0.04	0.04	0.20/0.35	3.25/3.75	—	0.20/0.30
A 4820	4820	0.18/0.23	0.50/0.70	0.04	0.04	0.20/0.35	3.25/3.75	—	0.20/0.30

See notes on page 205.

AVERAGE PHYSICAL PROPERTIES
TOLERANCES — CUTTING EXTRAS
EFERENCE ABLES
ATA

A. I. S. I. AND S. A. E. SPECIFICATIONS

AISI NUMBER June, 1945	SAE NUMBER Jan., 1945	CHEMICAL COMPOSITION LIMITS, PER CENT						
		C	Mn	P, Max.	S, Max.	Si	Cr	V
A 5120	5120	0.17/0.22	0.70/0.90	0.04	0.04	0.20/0.35	0.70/0.90	—
A 5130	—	0.28/0.33	0.70/0.90	0.04	0.04	0.20/0.35	0.80/1.10	—
A 5140	5140	0.38/0.43	0.70/0.90	0.04	0.04	0.20/0.35	0.70/0.90	—
A 5145	—	0.43/0.48	0.70/0.90	0.04	0.04	0.20/0.35	0.70/0.90	—
A 5150	5150	0.48/0.55	0.70/0.90	0.04	0.04	0.20/0.35	0.70/0.90	—
A 5152	—	0.48/0.55	0.70/0.90	0.04	0.04	0.20/0.35	0.90/1.20	—
E 52095	—	0.95/1.10	0.25/0.45	0.025	0.025	0.20/0.35	0.40/0.60	—
E 52098	—	0.95/1.10	0.25/0.45	0.025	0.025	0.20/0.35	0.90/1.15	—
E 52100	—	0.95/1.10	0.25/0.45	0.025	0.025	0.20/0.35	1.20/1.50	—
E 52101	—	0.95/1.10	0.25/0.45	0.025	0.025	0.20/0.35	1.30/1.60	—
A 6120	—	0.17/0.22	0.70/0.90	0.04	0.04	0.20/0.35	0.70/0.90	0.10 Min.
A 6145	—	0.43/0.48	0.70/0.90	0.04	0.04	0.20/0.35	0.80/1.10	0.15 Min.
A 6150	6150	0.48/0.55	0.65/0.90	0.04	0.04	0.20/0.35	0.80/1.10	0.15 Min.
E 6150	—	0.47/0.53	0.70/0.90	0.025	0.025	0.20/0.35	0.80/1.10	0.15 Min.
A 6152	—	0.48/0.55	0.70/0.90	0.04	0.04	0.20/0.35	0.80/1.10	0.10 Min.

See notes on page 205.

A. I. S. I. SPECIFICATIONS

AISI NUMBER June 1945	C	Mn	P, Max.	S, Max.	Si	Ni	Cr	Mo
					CHEMICAL COMPOSITION LIMITS, PER CENT			
A 8612	0.10/0.15	0.70/0.90	0.04	0.04	0.20/0.35	0.40/0.70	0.40/0.60	0.15/0.25
A 8615	0.13/0.18	0.70/0.90	0.04	0.04	0.20/0.35	0.40/0.70	0.40/0.60	0.15/0.25
A 8617	0.15/0.20	0.70/0.90	0.04	0.04	0.20/0.35	0.40/0.70	0.40/0.60	0.15/0.25
A 8620	0.18/0.23	0.70/0.90	0.04	0.04	0.20/0.35	0.40/0.70	0.40/0.60	0.15/0.25
A 8622	0.20/0.25	0.70/0.90	0.04	0.04	0.20/0.35	0.40/0.70	0.40/0.60	0.15/0.25
A 8625	0.23/0.28	0.70/0.90	0.04	0.04	0.20/0.35	0.40/0.70	0.40/0.60	0.15/0.25
A 8627	0.25/0.30	0.70/0.90	0.04	0.04	0.20/0.35	0.40/0.70	0.40/0.60	0.15/0.25
A 8630	0.28/0.33	0.70/0.90	0.04	0.04	0.20/0.35	0.40/0.70	0.40/0.60	0.15/0.25
A 8632	0.30/0.35	0.70/0.90	0.04	0.04	0.20/0.35	0.40/0.70	0.40/0.60	0.15/0.25
A 8635	0.33/0.38	0.75/1.00	0.04	0.04	0.20/0.35	0.40/0.70	0.40/0.60	0.15/0.25
A 8637	0.35/0.40	0.75/1.00	0.04	0.04	0.20/0.35	0.40/0.70	0.40/0.60	0.15/0.25
A 8640	0.38/0.43	0.75/1.00	0.04	0.04	0.20/0.35	0.40/0.70	0.40/0.60	0.15/0.25
A 8642	0.40/0.45	0.75/1.00	0.04	0.04	0.20/0.35	0.40/0.70	0.40/0.60	0.15/0.25
A 8645	0.43/0.48	0.75/1.00	0.04	0.04	0.20/0.35	0.40/0.70	0.40/0.60	0.15/0.25
A 8647	0.45/0.50	0.75/1.00	0.04	0.04	0.20/0.35	0.40/0.70	0.40/0.60	0.15/0.25
A 8650	0.48/0.53	0.75/1.00	0.04	0.04	0.20/0.35	0.40/0.70	0.40/0.60	0.15/0.25
A 8712	0.10/0.15	0.70/0.90	0.04	0.04	0.20/0.35	0.40/0.70	0.40/0.60	0.20/0.30
A 8715	0.13/0.18	0.70/0.90	0.04	0.04	0.20/0.35	0.40/0.70	0.40/0.60	0.20/0.30
A 8717	0.15/0.20	0.70/0.90	0.04	0.04	0.20/0.35	0.40/0.70	0.40/0.60	0.20/0.30
A 8720	0.18/0.23	0.70/0.90	0.04	0.04	0.20/0.35	0.40/0.70	0.40/0.60	0.20/0.30
A 8722	0.20/0.25	0.70/0.90	0.04	0.04	0.20/0.35	0.40/0.70	0.40/0.60	0.20/0.30
A 8725	0.23/0.28	0.70/0.90	0.04	0.04	0.20/0.35	0.40/0.70	0.40/0.60	0.20/0.30

Continued on next page

See notes on page 205.

A. I. S. I. SPECIFICATIONS

AISI NUMBER June 1945	CHEMICAL COMPOSITION LIMITS, PER CENT C	Mn	P, Max.	S, Max.	Si	Ni	Cr	Mo
A 8727	0.25/0.30	0.70/0.90	0.04	0.04	0.20/0.35	0.40/0.70	0.40/0.60	0.20/0.30
A 8730	0.28/0.33	0.70/0.90	0.04	0.04	0.20/0.35	0.40/0.70	0.40/0.60	0.20/0.30
A 8732	0.30/0.35	0.70/0.90	0.04	0.04	0.20/0.35	0.40/0.70	0.40/0.60	0.20/0.30
A 8735	0.33/0.38	0.75/1.00	0.04	0.04	0.20/0.35	0.40/0.70	0.40/0.60	0.20/0.30
A 8737	0.35/0.40	0.75/1.00	0.04	0.04	0.20/0.35	0.40/0.70	0.40/0.60	0.20/0.30
A 8740	0.38/0.43	0.75/1.00	0.04	0.04	0.20/0.35	0.40/0.70	0.40/0.60	0.20/0.30
A 8742	0.40/0.45	0.75/1.00	0.04	0.04	0.20/0.35	0.40/0.70	0.40/0.60	0.20/0.30
A 8745	0.43/0.48	0.75/1.00	0.04	0.04	0.20/0.35	0.40/0.70	0.40/0.60	0.20/0.30
A 8747	0.45/0.50	0.75/1.00	0.04	0.04	0.20/0.35	0.40/0.70	0.40/0.60	0.20/0.30
A 8750	0.48/0.53	0.75/1.00	0.04	0.04	0.20/0.35	0.40/0.70	0.40/0.60	0.20/0.30
A 9255	0.50/0.60	0.70/0.95	0.04	0.04	1.80/2.20	....	....	....
A 9260	0.55/0.65	0.70/1.00	0.04	0.04	1.80/2.20	....	....	....
A 9261	0.55/0.65	0.75/1.00	0.04	0.04	1.80/2.20	....	0.10/0.25	....
A 9262	0.55/0.65	0.75/1.00	0.04	0.04	1.80/2.20	....	0.25/0.40	....
A 9310	0.08/0.13	0.45/0.65	0.04	0.04	0.20/0.35	3.00/3.50	1.00/1.40	0.08/0.15
E 9310	0.08/0.13	0.45/0.65	0.025	0.025	0.20/0.35	3.00/3.50	1.00/1.40	0.08/0.15
A 9312	0.10/0.15	0.45/0.65	0.04	0.04	0.20/0.35	3.00/3.50	1.00/1.40	0.08/0.15
E 9312	0.10/0.15	0.45/0.65	0.025	0.025	0.20/0.35	3.00/3.50	1.00/1.40	0.08/0.15
A 9315	0.13/0.18	0.45/0.65	0.04	0.04	0.20/0.35	3 00/3.50	1.00/1.40	0.08/0.15
E 9315	0.13/0.18	0.45/0.65	0.025	0.025	0.20/0.35	3 00/3.50	1.00/1.40	0.08/0.15
A 9317	0.15/0.20	0.45/0.65	0.04	0.04	0.20/0.35	3 00/3.50	1.00/1.40	0.08/0.15

See notes on page 205.

Continued on next page

A. I. S. I. SPECIFICATIONS

AISI NUMBER June 1945	C	Mn	P, Max.	S, Max.	Si	Ni	Cr	Mo
	CHEMICAL COMPOSITION LIMITS, PER CENT							
E 9317	0.15/0.20	0.45/0.65	0.025	0.025	0.20/0.35	3.00/3.50	1.00/1.40	0.08/0.15
A 9320	0.18/0.23	0.45/0.65	0.04	0.04	0.20/0.35	3.00/3.50	1.00/1.40	0.08/0.15
E 9320	0.18/0.23	0.45/0.65	0.025	0.025	0.20/0.35	3.00/3.50	1.00/1.40	0.08/0.15
A 9830	0.28/0.33	0.70/0.90	0.04	0.04	0.20/0.35	0.85/1.15	0.70/0.90	0.20/0.30
A 9832	0.30/0.35	0.70/0.90	0.04	0.04	0.20/0.35	0.85/1.15	0.70/0.90	0.20/0.30
A 9835	0.33/0.38	0.70/0.90	0.04	0.04	0.20/0.35	0.85/1.15	0.70/0.90	0.20/0.30
A 9837	0.35/0.40	0.70/0.90	0.04	0.04	0.20/0.35	0.85/1.15	0.70/0.90	0.20/0.30
A 9840	0.38/0.43	0.70/0.90	0.04	0.04	0.20/0.35	0.85/1.15	0.70/0.90	0.20/0.30
A 9842	0.40/0.45	0.70/0.90	0.04	0.04	0.20/0.35	0.85/1.15	0.70/0.90	0.20/0.30
A 9845	0.43/0.48	0.70/0.90	0.04	0.04	0.20/0.35	0.85/1.15	0.70/0.90	0.20/0.30
A 9847	0.45/0.50	0.70/0.90	0.04	0.04	0.20/0.35	0.85/1.15	0.70/0.90	0.20/0.30
A 9850	0.48/0.53	0.70/0.90	0.04	0.04	0.20/0.35	0.85/1.15	0.70/0.90	0.20/0.30

The lowest standard maximum phosphorus or sulphur limit that may be specified for acid open hearth or acid electric furnace steel is 0.05 per cent.

Lowest minimum silicon limit to be specified for acid open hearth or acid electric furnace alloy steel is 0.15 per cent.

Phosphorus and Sulphur on Basic open-hearth product shall be .040 Max. Phosphorus and Sulphur on Basic Electric Furnace product shall be .025 Max.

Small quantities of certain elements may be found in alloy steel which are not specified or required. These elements are to be considered as incidental and acceptable to the following maximum amounts: copper, 0.35 per cent; nickel, 0.25 per cent; chromium, 0.20 per cent; molybdenum, 0.06 per cent.

AVERAGE PHYSICAL PROPERTIES
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GLOSSARY OF TERMS

ANNEALING—A heating and cooling operation, usually slow cooling, performed on steels in the solid state.

Annealing is a comprehensive term, the purpose of which may be:

(1) To remove stresses.
(2) To induce softness.
(3) To alter ductility, toughness, electrical magnetic or other physical properties.
(4) To refine the crystalline structure.
(5) To remove gases.
(6) To produce a definite microstructure.

CARBURIZING—A case hardening process by which carbon alone is added to a limited or specified penetration by heating steel below its melting point in contact with carbonaceous solids, liquids, or gases.

CASE—The surface area of an iron-base alloy whose hardness has been increased substantially by case hardening.

CASE HARDENING—A process of carburizing or cyaniding followed by quenching, or of nitriding, which is used to substanially increase the surface hardness of an iron-base alloy.

CORE—The interior portion of an iron-base alloy whose chemical composition has not been substantially changed as the result of case hardening.

ELASTIC LIMIT—The greatest stress a material is capable of developing without a permanent deformation remaining after complete release of the stress. To determine the elastic limit, a load is applied to a specimen at a uniform rate, and the stress at which the specimen suddenly elongates is recorded on an "extensometer," reading to 0.0002 inch, which is attached to the specimen to indicate distance between gage marks.

HARDENING—A Heat Treating Process that implies heating steel to a temperature above the critical range, and cooling it rapidly enough through the critical range to harden it appreciably.

HARDNESS TESTS—

(a) **Brinell Hardness**—A hardness test performed on a Brinell hardness testing machine. The smooth surface of a specimen is indented with a spherical-shaped hardened steel ball of known diameter by means of a predetermined load applied to the ball. The diameter of the impression is measured in millimeters with a micrometer microscope, and the reading is compared with a chart to determine the Brinell Hardness number (Bhn).

(b) **Rockwell Hardness**—A hardness test performed on a Rockwell hardness testing machine. Hardness is determined by a dial reading which indicates the depth of penetration of a steel ball or diamond cone when a load is applied.

(c) **Scleroscope or Shore Hardness**—A hardness test performed on a Shore Scleroscope Hardness Tester. The hardness is determined by the rebound of a diamond pointed hammer (or tup) when it strikes the surface of a specimen. The hammer (or tup) is enclosed in a glass tube and the height of the rebound is read either against a graduated scale inscribed on the tube, or on a dial, depending on the model instrument used.

GLOSSARY OF TERMS (Concluded)

HEAT TREATMENT—Steel is heat treated to improve it for the service intended or to prepare it for operations such as cold rolling, cold drawing or machining. This process is broadly defined as an operation or combination of operations involving the heating and cooling of steel in the solid state to obtain a certain desired condition or set of properties.

MECHANICAL WORKING—Changing the former structure of a metal by subjecting it to pressure by rolling, pressing, or forging. The crystalline structure is refined and the quality of the metal is improved as the particles are forced into intimate contact. The strength is always increased by working and the hardness and ductility may be affected depending upon the amount of work done and by the temperature at which the working is carried on.

NITRIDING—A process by which nitrogen alone is added to a limited or specified penetration by heating certain alloy steels, which have a properly conditioned surface, in contact with ammonia gas or other substance from which the steel may absorb nitrogen. This produces an extremely hard, wear-resistant surface.

NORMALIZING—The normalizing process is applied to steel to restore its normal condition after hot working, cold working, or non-uniform cooling, or to efface the effects of a previous heat treatment. Normalizing is accomplished by heating to a temperature about 100° F above the critical range and then cooling in still air at room temperature.

PERCENTAGE OF ELONGATION—The percentage of increase in length of a tension test specimen after rupture.

PICKLING—Removing scale by immersion in a dilute acid bath.

QUENCHING—Cooling by immersion in some medium, which may be any liquid or gas, or even a solid in suitable form, to absorb heat rapidly from the article to be quenched.

REDUCTION OF AREA—The difference between the original cross sectional area and that of the smallest area at point of rupture. It is usually stated as a percentage of the original area.

SPHERODIZING—A heat treating process which is generally applied to high carbon steel to improve machinability. It consists of prolonged heating at a temperature just below or within the critical temperature range, followed usually by slow cooling.

TEMPERING OR DRAWING—This process is applied to relieve stresses due to hardening and to adjust the hardness to the value desired. The hardened steel is reheated to a temperature below the lower critical range and is then permitted to cool.

TENSILE STRENGTH—The maximum load, per unit of original cross-sectional area, a material in tension is capable of withstanding before complete failure or rupture.

YIELD POINT—The load per unit of original cross-sectional area at which a marked increase in the deformation of a specimen occurs without increase of load. It is usually determined by the sudden drop of the beam of the testing machine or by use of dividers or by means of an extensometer.

AVERAGE PHYSICAL PROPERTIES
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PHYSICAL PROPERTIES OF VARIOUS STEELS COMMONLY ORDERED TO CHEMICAL SPECIFICATIONS

The data given below represents the average results of a number of tests made at steel mill laboratories. Tensile strength, yield point, elongation, reduction of area and hardness are all affected by the size of the section being heat treated and permissible variations in analysis. This information, therefore, is only a guide and cannot be used as a basis for the acceptance or rejection of material. Physical properties can only be guaranteed on steels ordered heat treated to acceptable commercial limits. All tests were made on one (1) inch round bars.

AISI No.	Condition	Tensile Strength PSI	Yield Point PSI	% Elong. in 2"	% Red. of Area	Brinell Hardness	Rockwell Hardness		Quenching Temp. °F	Drawing Temp. °F	Quenching Medium
							C	B			
C1015	Hot rolled	60,000	40,000	30	62	137		77			
	Cold drawn	76,000	56,000	22	54	163	3				
	Heat treated	85,000	55,000	24	64	165	4		1625	1000	Water
C1019	Hot rolled	63,000	47,000	28	58	129		73			
	Cold drawn	80,000	64,000	20	53	179	8				
	Heat treated	90,000	62,000	22	62	173	7		1600	1000	Water
C1020	Hot rolled	69,000	47,000	30	58	135		76			
	Cold drawn	72,000	54,000	24	54	143		79			
	Heat treated	95,000	64,000	20	60	171	6		1600	1000	Water

(Continued on following page)

PHYSICAL PROPERTIES

Average results on 1' round bars

AISI No.	Condition	Tensile Strength PSI	Yield Point PSI	% Elong. in 2"	% Red. of Area	Brinell Hardness	Rockwell Hardness		Quenching Temp. °F	Drawing Temp. °F	Quenching Medium
							C	B			
C1025	Hot rolled	70,000	43,000	27	56	135		76			
	Cold drawn	79,000	65,000	19	50	156	1				
	Heat treated	97,000	67,000	26	60	197	13		1600	1000	Water
C1035	Hot rolled	86,000	53,000	26	55	170	6				
	Cold drawn	95,000	74,000	17	45	186	10				
	Heat treated	102,000	75,000	24	60	220	18		1575	1000	Water
C1040	Hot rolled	90,000	56,000	24	49	187	10				
	Cold drawn	97,000	77,000	17	42	197	13				
	Heat treated	109,000	84,000	21	55	217	18		1550	1000	Water
C1045	Hot rolled	95,000	58,000	23	46	201	15				
	Cold drawn	102,000	89,000	15	37	207	16				
	Heat treated	114,000	87,000	19	50	235	22		1525	1000	Water
B1112	Hot rolled	62,000	41,000	32	52	121		70			
	Cold drawn	90,000	72,000	16	45	179	8				
B1113	Hot rolled	63,000	47,000	28	49	127		72			
	Cold drawn	95,000	85,000	15	45	187	10				

(Continued on following page)

AVERAGE PHYSICAL PROPERTIES
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PHYSICAL PROPERTIES

Average results on 1″ round bars

AISI No.	Condition	Tensile Strength PSI	Yield Point PSI	% Elong. in 2″	% Red. of Area	Brinell Hardness	Rockwell Hardness		Quenching Temp. °F	Drawing Temp. °F	Quenching Medium
							C	B			
C1117	Hot rolled	68,000	48,000	23	50	155	1				
	Cold drawn	80,000	65,000	21	52	163	3				
C1120	Hot rolled	64,000	40,000	28	47	135		76			
	Cold drawn	78,000	62,000	20	48	163	3				
C1137	Hot rolled	87,000	54,000	18	33	183	9				
	Cold drawn	107,000	90,000	16	40	212	17				
	Heat treated	120,000	90,000	22	53	241	23		1550	1000	Oil
A1335	Heat treated	137,000	120,000	16	52	293	31		1550	1000	Oil
A2317	Heat treated	150,000	125,000	18	52	321	34		1450	300	Oil
A2330	Heat treated	127,000	100,000	22	60	277	29		1500	1000	Oil
A2340	Heat treated	138,000	126,000	18	60	302	32		1475	1000	Oil
A3115	Heat treated	125,000	90,000	15	45	269	28		1500	300	Oil
A3130	Heat treated	124,000	110,000	20	60	269	28		1500	1000	Oil

(Continued on following page

PHYSICAL PROPERTIES

Average results on 1' round bars

AISI No.	Condition	Tensile Strength PSI	Yield Point PSI	% Elong. in 2"	% Red. of Area	Brinell Hardness	Rockwell Hardness C	Rockwell Hardness B	Quenching Temp. °F	Drawing Temp. °F	Quenching Medium
A3140	Heat treated	137,000	125,000	17	55	293	30		1525	1000	Oil
A3240	Heat treated	153,000	131,000	18	55	331	35		1500	1000	Oil
A4119	Heat treated	125,000	93,000	15	45	269	27		1575	300	Oil
A4130	Heat treated	130,000	115,000	18	58	277	28		1600	1000	Oil
A4140	Heat treated	160,000	142,000	20	55	341	36		1575	1000	Oil
A4150	Heat treated	175,000	150,000	18	52	370	38		1550	1000	Oil
A4340	Heat treated	158,000	138,000	22	60	341	36		1525	1000	Oil
A4615	Heat treated	125,000	101,000	18	50	269	27		1500	300	Oil
A4640	Heat treated	155,000	137,000	17	55	331	35		1525	1000	Oil
A6145	Heat treated	170,000	154,000	15	48	363	38		1575	1000	Oil

Concluded on following page)

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PHYSICAL PROPERTIES

Average results on 1″ round bars

AISI No.	Condition	Tensile Strength PSI	Yield Point PSI	% Elong. in 2″	% Red. of Area	Brinell Hardness	Rockwell Hardness		Quenching Temp. °F	Drawing Temp. °F	Quenching Medium
							C	B			
A8617	Heat treated	130,000	92,000	25	55	248	24		1700	300	Oil
A8630	Heat treated	135,000	119,000	20	60	311	33		1600	1000	Oil
A8640	Heat treated	140,000	120,000	21	58	321	34		1600	1000	Oil
A8720	Heat treated	132,000	98,000	25	60	302	32		1700	300	Oil
A8742	Heat treated	160,000	142,000	16	53	341	36		1525	1000	Oil

HARDNESS CONVERSION TABLE

APPROXIMATE VALUES

BRINELL		ROCKWELL		TENSILE STRENGTH
		C Scale	B Scale	
Diam. in Mm. 3000 Kg. Load, 10 Mm. Ball	Hardness Number	150 Kg. Load, 120 Deg. Cone	100 Kg. Load, $\frac{1}{16}$ in. Ball	1000 lb. Per Sq. In.
2.20	780	70	...	384
2.25	745	68	...	368
2.30	712	66	...	352
2.35	682	64	...	337
2.40	653	62	...	324
2.45	627	60	...	311
2.50	601	58	...	298
2.55	578	57	...	287
2.60	555	55	...	276
2.65	534	53	...	266
2.70	514	52	...	256
2.75	495	50	...	247
2.80	477	49	...	238
2.85	461	47	...	229
2.90	444	46	...	220
2.95	429	45	...	212
3.00	415	44	...	204
3.05	401	42	...	196
3.10	388	41	...	189
3.15	375	40	...	182
3.20	363	38	...	176
3.25	352	37	...	170
3.30	341	36	...	165
3.35	331	35	...	160
3.40	321	34	...	155
3.45	311	33	...	150
3.50	302	32	...	146
3.55	293	31	...	142
3.60	285	30	...	138
3.65	277	29	...	134
3.70	269	28	...	131
3.75	262	26	...	128
3.80	255	25	...	125
3.85	248	24	...	122
3.90	241	23	100	119
3.95	235	22	99	116
4.00	229	21	98	113
4.05	223	20	97	110
4.10	217	..	96	107
4.15	212	..	96	104
4.20	207	..	95	101
4.25	202	..	94	99
4.30	197	..	93	97
4.35	192	..	92	95
4.40	187	..	91	93
4.45	183	..	90	91
4.50	179	..	89	89
4.55	174	..	88	87
4.60	170	..	87	85
4.65	166	..	86	83
4.70	163	..	85	82
4.75	159	..	84	80
4.80	156	..	83	78
4.85	153	..	82	76
4.90	149	..	81	75
4.95	146	..	80	74
5.00	143	..	79	72
5.05	140	..	78	71
5.10	137	..	77	70
5.15	134	..	76	68
5.20	131	..	74	66
5.25	128	..	73	65
5.30	126	..	72	64
5.35	124	..	71	63
5.40	121	..	70	62
5.45	118	..	69	61
5.50	116	..	68	60

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HEAT TREATMENT TEMPERATURE GUIDE

DEGREES FAHRENHEIT (°F)

Type Steel AISI No.	Forging	Normalizing	Annealing	Quenching
1010	2000-2300	1650-1800	1600-1700	
1030	1950-2250	1600-1675	1575-1650	1550-1625 W & O
1050	1950-2200	1550-1625	1550-1600	1450-1525 W & O
1070	1950-2150	1550-1575	1475-1550	1425-1550 W & O
2315	1950-2150	1600-1650	1550	
2330	1950-2200	1550	1475	1475-1500 W
2515	1800-2000	1550-1600	1475	
3115	1950-2150	1650	1575	
3130	1950-2250	1575	1500	1500-1550 W
3140	1950-2150	1550-1600	1550-1600	1475-1525 O
4119	2000-2200	1600-1700	1500-1600	
4130	2000-2200	1600-1700	1525-1575	1550-1600 W
4140	2000-2200	1600-1700	1500-1550	1525-1575 O
4615	1900-2200	1650	1575	
4640	2000-2200	1650	1525-1575	1500-1550 O
5115	1950-2250	1575	1575	
5130	1950-2250	1600	1550	1525 W
5140	1950-2250	1600	1525	1525 O
6120	1950-2250	1625-1675	1600	
6130	1950-2250	1600	1550	1550 W
6145	1950-2200	1625	1550	1575 O
8620	1950-2250	1600-1700	1525-1575	1550-1600 W
8630	1950-2250	1650	1525-1575	1550 O
8640	1950-2200	1650	1525-1575	1525 O
8720	1950-2250	1600-1700	1525-1575	1550-1600 W
8730	1950-2250	1650	1550	1550 O
8740	1950-2200	1650	1525-1575	1525 O
9255	1950-2200	1600	1550	1575 O

Quench Medium { W—Water
O—Oil

APPROXIMATE CRITICAL TEMPERATURES
FOR A. I. S. I. STEELS

A. I. S. I. No.	Slow Heating			Slow Cooling		
	AC_1	AC_2	AC_3	AR_3	AR_2	AR_1
1035	1335		1475	1455	1395	1275
1040	1340		1455	1415		1275
1050	1340		1425	1390		1275
1070	1345		1370	1340		1280
1095			1360	1290		
1330	1325		1480	1340		1160
1335	1315		1460	1340		1165
1340	1315		1435	1310		1160
1345	1315		1410	1300		1160
1350	1310		1400	1255		1105
2317	1295	1350	1430	1345	1210	1050
2330	1275	1315	1400	1180		1050
2335	1275		1375	1180		1050
2340	1280		1360	1180		1060
2345	1280		1350	1180		1060
2515	1250	1335	1420	1220	1140	825
3115	1355	1400	1500	1470	1380	1240
3120	1350	1400	1480	1455	1380	1230
3130	1345	1380	1460	1360		1220
3135	1340		1445	1300		1220
3140	1355		1415	1295		1220
3145	1355		1395	1295		1220
3150	1355		1380	1275		1215
3240	1335		1425	1280		1240
3310	1330		1435	1240		1160
4130	1395	1435	1485	1405	1395	1280
4135	1395	1440	1475	1380	1360	1280
4140	1380		1460	1370		1280
4150	1365		1395	1355		1280
4340	1350		1425	1220		725
4615	1335	1400	1480	1400	1320	1200
4620	1335		1470	1390		1175
4640	1320		1430	1300		1125
4815	1300		1440	1310		800
4820	1300		1440	1260		760
5120	1410	1460	1540	1470	1420	1295
5140	1370		1440	1345		1280
5150	1330		1420	1280		1220
52100	1340		1415	1315		1280
6120	1410	1460	1545	1440	1380	1300
6145	1390		1450	1375		1290
9255	1400		1500	1380		1320
9260	1400		1500	1380		1315

TOLERANCES
—
CUTTING
EXTRAS

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ABLES

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COLD SHEARING LIMITATIONS

Cold Shearing Limitations for Forge Shop Blanks, Carbon and Alloy Steel Rounds, Squares, or Sections Having Equivalent Cross-Sectional Area in the Hot Rolled Condition.

Cold shearing of carbon and alloy steel bars and billets may be accomplished satisfactorily if, in using the following table, it is kept in mind that cold shearing operations are influenced by conditions other than the composition of the material. Some of these conditions are: shear capacity and design, shear blade clearances, operating speed, shear blade type and design, hold-down adjustments, temperature of the material being sheared, etc.

Steel Grade	Maximum Shearable Size in Inches Based on Carbon Content				
	Up to 0.20	0.21 to 0.25 incl.	0.26 to 0.33 incl.	0.34 to 0.40 incl.	0.41 to 0.48 incl.
Carbon Steel, Mn up to 1.00	4½	4½	4	3½	3*
Carbon Steel, Mn 1.01 to 1.40	4	4	3½	3	2*
Carbon Steel, Mn 1.41 to 1.65	3½	3½	3	2½	1¾*
AISI 1300	4	4	3½	2½	2
AISI 3100	4	4	3½	3	2½
AISI 4100	4	4	3½	2½	2
AISI 8600	4	4	3	2½	2
AISI 8700	4	4	3	2½	2

*These sizes can be safely sheared up to 0.55C.

Note: Cold shearing of alloy steels over 0.48C content cannot be assured without prior annealing.

STANDARD MANUFACTURING TOLERANCES

Cold Finished Carbon Steel Bars

Size	Mean of Carbon .30 or less	Mean of Carbon .31 to .50 Incl.
Rounds		
1″ or under	.002″ minus	.003″ minus
Over 1″ to 2″ Incl.	.003″ minus	.004″ minus
Over 2″ to 4″ Incl.	.004″ minus	.005″ minus
Over 4″ to 6″ Incl.	.005″ minus	.006″ minus
Over 6″ to 8″ Incl.	.006″ minus	.008″ minus
Squares		
Up to 5⁄16″ Incl.	.003″ minus	.004″ minus
Over 5⁄16″ to 1″ Incl.	.004″ minus	.005″ minus
Over 1″ to 2½″ Incl.	.005″ minus	.006″ minus
Over 2½″ to 4½″ Incl.	.006″ minus	.008″ minus
Hexagons		
Up to 5⁄16″ Incl.	.002″ minus	.003″ minus
Over 5⁄16″ to 1″ Incl.	.003″ minus	.004″ minus
Over 1″ to 2½″ Incl.	.004″ minus	.005″ minus
Over 2½″ to 4″ Incl.	.005″ minus	.006″ minus

Flats—(Thickness)

Size	Tolerance
Less than 1½″ Wide	
Up to 5⁄16″ Incl.	.002″ minus
Over 5⁄16″ to 1″ Incl.	.003″ minus
Over 1″ to less than 1½″	.004″ minus
1½″ to 4″ Wide	
Up to 5⁄16″ Incl.	.005″ minus
Over 5⁄16″ to 1″ Incl.	.005″ minus
Over 1″ to less than 4″	.006″ minus
Over 4″ to 6″ Wide	
Up to 5⁄16″ Incl.	.008″ minus
Over 5⁄16″ to 1″ Incl.	.009″ minus
Over 1″ to less than 6″	.010″ minus
Over 6″ Wide	
Up to 5⁄16″ Incl.	.013″ minus
Over 5⁄16″ to 1″ Incl.	.014″ minus
Over 1″	.015″ minus

The tolerances on Flats apply to thickness and width.

STANDARD VARIATIONS IN CUTTING

Material Cut From Warehouse Stock

The variations listed below govern cutting on commodities as specified for shipments from warehouse stock. All orders we accept are subject to these variations in cutting unless otherwise specified. Prices for greater accuracy quoted upon application.

Bars and Bar Shapes	Over	Under
Rounds and Squares up to 7¼ inch	¼ inch	¼ inch
Flats, ¼ inch to ⅝ inch thick	⅛ inch	⅛ inch
Flats, over ⅝ inch thick	¼ inch	¼ inch
Bar Tees and Channels, up to but not including 3 inch	¼ inch	¼ inch
Bar Angles, up to but not including 3 inch	⅛ inch	⅛ inch

Structurals	Over	Under
Beams, Channels and Tees, 6 inch and under	¼ inch	¼ inch
Beams, Channels and Tees, over 6 inch	⅜ inch	⅜ inch
Angles, 3 inch and larger	⅛ inch	⅛ inch

Plates (Except Sketches)	Over	Under
U. M. Plates, 1 inch and under, 24 inches wide and under	¼ inch	¼ inch
Plates, ⅝ inch and under, 36 inches wide and under	¼ inch	¼ inch
Plates, ⅝ inch and under, over 36 inches wide	¼ inch	¼ inch
Plates, over ⅝ inch up to 9 feet 6 inches on cut edge	5/16 inch	5/16 inch
Plates, all thicknesses where cutting edge is longer than 9 feet 6 inches	5/16 inch	5/16 inch

Sheets Rectangular	Over	Under
Sheets, No. 8 and 10 Gage	3/16 inch	3/16 inch
Sheets, No. 12 to 18 Gage	⅛ inch	⅛ inch
Sheets, No. 20 to 30 Gage	1/16 inch	1/16 inch

Strip Steel	Over	Under
.120″ and over	⅛ inch	⅛ inch
.109″ to .050″, incl	1/16 inch	1/16 inch
.042″ to .016″, incl	1/32 inch	1/32 inch

Flame Cutting Plates	Over	Under
Plates, 3/16″ to ⅝″ thick	1/16 inch	1/16 inch
Plates, ¾″ to 2″ thick	3/32 inch	3/32 inch
Plates, over 2″ to 4″ thick	⅛ inch	⅛ inch
Plates, over 4″ thick	3/16 inch	3/16 inch

CUTTING EXTRAS

SHEARING EXTRAS
HOT ROLLED CARBON BARS
HOT ROLLED STRIP AND ANGLES
UNDER .60 CARBON

Rounds
Squares } 2″ diameter and smaller.
Hexagons
Flats 1½″ x 6″ and smaller.
Angles 2½ x 2½ x ½″ and smaller.
Angles 3″ x 2″ to 6″ x 6″ inclusive, under 5′0″ long.

Total cuts of one size, length and grade determine the charge per cut.

Qualities **.60 Carbon and over,** use hack saw cutting extras for Alloy Steel Bars.

MINIMUM CHARGE:—**35c** net per size, grade and length.

Weight per Lineal Foot	Over 8′0″	4′0″ to 8′0″ incl.		1′0″ to under 4′0″		Under 1′0″	
	Any Number	Under 50 cuts	50 cuts and over	Under 50 cuts	50 cuts and over	Under 50 cuts	50 cuts and over
Under 1.0 lb........	3c	3c	2c	3c	2c	1c	1c
" 2.5 to 1.0 lb.	4c	3c	2c	3c	2c	2c	1c
" 4.5 to 2.5 "	5c	4c	3c	3c	2c	2c	1c
" 7.5 to 4.5 "	6c	5c	4c	3c	2c	2c	1c
" 11.0 to 7.5 "	7c	6c	4c	4c	3c	3c	2c
" 15.0 to 11.0 "	9c	8c	5c	4c	3c	3c	2c
" 20.0 to 15.0 "	11c	9c	6c	5c	4c	3c	2c
20 lbs and over......	13c	11c	8c	7c	5c	4c	3c

Rounds
Squares } Over 2″
Hexagons
Flats over 1½″ thick } USE HOT ROLLED HACK SAWING EXTRAS PAGE 220
Bar Channels
Bar Tees
Bar Zees

All Bars and Bar Shapes weighing under 1 lb. per foot and all Channels, Ovals, Half Ovals, Half Rounds, Hexagons, Bevel Edge, Square Root Angles, Square Twisted, Round Edge Flats, Pickled and Oiled Strip, Hot Rolled Strip 3/16″ thick to and including #16 gage (except 3/16″ wider than 6″)—Charged on gross weight unless carried in lengths of 30′0″ or longer.

Rounds, Squares, Flats and Bar Angles weighing over 1 lb. per foot, and all sizes and Shapes carried 30′0″ or longer charged on net weight.

Extras for shearing legs of angles see page 220

FRICTION SAW CUTTING EXTRAS
STRUCTURAL SHAPES

Beams, Channels, Tees and Zees 3″ and over
and Angles over 6″ either leg, Lengths 5′ and over, no charge.
Minimum Charge **35c** net per Section and Length.

Weight per Lineal Foot	Under 5′0″ long
Under 10 lbs....................................	7c per cut
" 17.5 to 10.0 lbs............................	10c " "
" 30 " 17.5 "	15c " "
" 45 " 30 "	20c " "
" 65 " 45 "	25c " "
" 90 " 65 "	30c " "
90 lbs. and over....................................	35c " "

Structural angles 3″x2″x3/16″ to 6″x6″ inclusive under 5′0″ long, see upper table.

CUTTING EXTRAS—Continued

SHEARING LEGS OF ANGLES

The following charges will be made in addition to regular cutting extras for length.

	10′0″ and less	Over 10′0″ to 20′0″	Over 20′0″ to 30′0″
Set-up Charge..................	$1.00 net	$1.00 net	$1.00 net
Per cut for each leg of each angle.	.25	.50	.75

The charge for shearing legs of angles will be on gross weight of the section required.

Leg shearing is done **before** cutting to length.

Example: 2 angles 5′0″ would take but one 25c leg shearing extra since the same would be cut from a 10′0″ angle.

HACK SAW CUTTING EXTRAS HOT ROLLED AND COLD FINISHED CARBON BARS

For all qualities of hot rolled carbon bars, bar shapes and hot rolled strip **under .60 carbon.** Also cold finished carbon bars **under .60 carbon.**

Charges in cents per cut to any one length 0′1″ and over of one size and one grade.

Lengths under 0′1″, use next higher weight bracket cutting charge. Quantity discounts do not apply on lengths over 8′0″.

Weight per Linea Foot	Minimum Charge per Size Grade and Length	Over 8′0″	8′0″ and under		
		Any Number of Cuts	Less than 10 Cuts	10 to 100 Cuts or 1000# of a Size	100 Cuts and over
Under 1.0............	$ 0.35	$ 0.03	$ 0.03	$ 0.03	$ 0.02
“ 2.5 to 1.0 lbs.	.35	.04	.04	.03	.02
“ 4.5 to 2.5 “	.35	.05	.05	.05	.04
“ 7.5 to 4.5 “	.35	.06	.06	.06	.05
“ 11.0 to 7.5 “	.35	.08	.08	.08	.06
“ 15.0 to 11.0 “	.35	.11	.11	.09	.08
“ 20.0 to 15.0 “	.40	.14	.14	.11	.11
“ 27.0 to 20.0 “	.45	.17	.17	.14	.13
“ 32.0 to 27.0 “	.50	.21	.21	.17	.16
“ 43.0 to 32.0 “	.60	.26	.26	.21	.20
“ 52.0 to 43.0 “	.65	.33	.33	.26	.25
“ 71.0 to 52.0 “	.75	.41	.41	.33	.31
“ 87.0 to 71.0 “	.90	.53	.53	.42	.40
“ 116.0 to 87.0 “	1.05	.67	.67	.54	.50
“ 139.0 to 116.0 “	1.25	.82	.82	.66	.62
“ 180.0 to 139.0 “	1.50	1.00	1.00	.80	.75
“ 203.0 to 180.0 “	1.70	1.20	1.20	.96	.90
“ 245.0 to 203.0 “	1.90	1.40	1.40	1.12	1.05
245.0 lbs. and over.....	2.20	1.70	1.70	1.36	1.28

All Hot Rolled Bars and Bar Shapes weighing under 1 lb. per foot and all Channels, Ovals, Half Ovals, Half Rounds, Hexagons, Bevel Edge, Square Root Angles, Square Twisted, Round Edge Flats, Pickled and Oiled Strip, Hot Rolled Strip (except 3⁄16″ wider than 6″) —Charged on gross weight unless carried in lengths of 30′0″ or longer.

Hot Rolled Rounds, Squares, Square Edge Flats and Bar Angles weighing over 1 lb. per foot and all sizes and Shapes carried 30′0″ or longer charged on net weight.

Cold Finished Carbon Bars Charged on net weight

CUTTING EXTRAS—Continued

HACK SAW CUTTING EXTRAS
HOT ROLLED AND COLD
FINISHED ALLOY BARS

ALSO CARBON STEEL BARS .60 CARBON AND OVER (EXCEPT STAINLESS)

Charges in cents per cut to any one length 0′1″ and over of one size and one grade.

Lengths under 0′1″ use next higher weight bracket cutting charge.

Quantity discounts do not apply on lengths over 8′0″.

		Over 8′0″	8′0″ and under		
Weight per Lineal Foot	Minimum Charge per Size, Grade and Length	Any Number of Cuts	Less than 10 Cuts	10 to 100 Cuts or 1000# of a Size	100 Cuts and over
Under 1.0 lb.	$ 0.35	$ 0.04	$ 0.04	$ 0.04	$ 0.03
" 2.5 to 1.0 lbs.	.35	.05	.05	.05	.04
" 4.5 to 2.5 "	.35	.08	.08	.08	.06
" 7.5 to 4.5 "	.35	.09	.09	.09	.07
" 11.0 to 7.5 "	.39	.12	.12	.12	.09
" 15.0 to 11.0 "	.41	.17	.17	.17	.13
" 20.0 to 15.0 "	.47	.21	.21	.17	.16
" 27.0 to 20.0 "	.54	.26	.26	.21	.20
" 32.0 to 27.0 "	.61	.32	.32	.26	.24
" 43.0 to 32.0 "	.73	.39	.39	.31	.29
" 52.0 to 43.0 "	.82	.50	.50	.40	.38
" 71.0 to 52.0 "	.96	.62	.62	.50	.47
" 87.0 to 71.0 "	1.17	.80	.80	.64	.60
" 116.0 to 87.0 "	1.39	1.01	1.01	.81	.76
" 139.0 to 116.0 "	1.66	1.23	1.23	.98	.92
" 180.0 to 139.0 "	2.00	1.50	1.50	1.20	1.13
" 203.0 to 180.0 "	2.30	1.80	1.80	1.44	1.35
" 245.0 to 203.0 "	2.60	2.10	2.10	1.68	1.58
245.0 lbs. and over	3.05	2.55	2.55	2.04	1.91

Alloy Bars charged on net weight.

Carbon Bars .60 Carbon and over charged on gross weight.

WAREHOUSE EXTRA FOR BOXING AND BURLAPPING

The following charges for boxing or burlapping should be added (1) when such protection is specified by a customer; (2) when material ordered requires special protection; (3) when it is necessary to meet transportation company specifications.

Burlapping full length (Min. 25c.)	**25c.** cwt.
Boxing (Min. 75c.)	**50c.** cwt

FRICTION SAW CUTTING EXTRAS RAILS

(Per 100 lbs.)

	2 Ft. and Over	Under 2 ft. to 1 ft.	Under 1 ft. to 6 In.	Under 6 In. to 4 In.	Under 4 In. to 2 In.
All Rails	$0.25	$0.40	$0.85	$1.40	$2.30

All charged on gross weight basis.

CUTTING EXTRAS—Continued

PLATE SHEARING

3/16" to 1" Thick Inclusive
Charge per 100 lbs.

3/16" to 1" thick inclusive, including Universal Mill, Sheared, Flange, Fire-box, High Carbon, Copper Bearing and Floor Plates; 3/16" H. R. Strip, over 6" wide, cut to length only and 3/16" material, cut to length and width.

Minimum charge of 35c net for each thickness. Widths over 6" charged on gross weight of nearest stock width. Widths 6" and under charged on gross weight of nearest stock width published for .15 to .20 carbon bars.

TO LENGTH ONLY

Thickness	LENGTH				
	5 Ft. and Longer	Under 5 Ft. to 3 Ft.	Under 3 Ft. to 2 Ft.	Under 2 Ft to 1 Ft.	Under 1 Ft. to over 6 In.
3/16" to 1" incl.	$0.00	$0.10	$0.25	$0.50	$1.55
Over 1"	See Flame Cutting Schedule.				

SHEARING TO WIDTH AND LENGTH OVER 6"

For Shearing to other than stock widths, the following extras apply:

Minimum charge **35c** net for each thickness.

Thickness	LENGTH				
	5 Ft. and Longer	Under 5 Ft. to 3 Ft.	Under 3 Ft. to 2 Ft.	Under 2 Ft. to 1 Ft.	Under 1 Ft. to over 6 In.
3/16" to 5/16" incl.	$0.30	$0.40	$0.55	$0.80	$1.85
Over 5/16" to 1/2" incl.	.25	.35	.50	.75	1.80
Over 1/2" to 1" incl.	.20	.30	.45	.70	1.75
Over 1"	See Flame Cutting Schedule.				

Charged on gross weight of nearest stock width.

Shearing to width of 6" and narrower, double the extras for shearing to widths and lengths shown above, charging for gross weight of nearest stock width.

SKETCH PLATES

Ordinary sketch plates up to 1" thick inclusive, with no reentrant cuts, will be charged for on the basis of above width and length shearing charges, plus 10c per 100 lbs. Based on gross weight of rectangular plate required in nearest stock width.

UNIVERSAL MILL PLATES OVER 1" THICK

Charge Per Piece for Cutting to Lengths Under 5 ft.

TO LENGTH ONLY	WIDTH					
	7"	8"	8½"	9"	10"	12"
1¼" thick	$0.15	$0.20	.....	$0.20	$0.20	$0.25
1½" thick	.20	.20	$0.20	.25	.25	.25
1¾" thick	...	.25	...	.25	.25	.30
2" thick	.25	.25	...	.25	.30	.30
2¼" thick	...	...	...	.30	...	...

Rectangular plates over 1" thick charged on net weight. Sketch plates over 1" thick, see Plate Burning Schedule.

CIRCLE CUTTING EXTRAS

SEE FLAME CUTTING

CUTTING EXTRAS—Continued

RECTANGULAR FLAME CUTTING

Extras Per Lineal Foot

Minimum Flame Cutting Charge—50c Net per Item

Thickness	Under 5 Ft.	5 Ft. and Over	Thickness	Under 5 Ft.	5 Ft. and Over
3/16"	$0.09	$0.07	2 1/4"	$0.43	$0.34
1/4"	.10	.08	2 1/2"	.46	.37
5/16"	.11	.09	2 3/4"	.52	.41
3/8"	.11	.09	3"	.57	.45
7/16"	.13	.10	3 1/4"	.61	.49
1/2"	.14	.11	3 1/2"	.67	.53
9/16"	.16	.12	3 3/4"	.71	.57
5/8"	.16	.12	4"	.76	.61
3/4"	.17	.13	4 1/2"	.86	.69
7/8"	.19	.15	5"	.96	.77
1"	.20	.16	5 1/2"	1.08	.86
1 1/8"	.23	.18	6"	1.20	.95
1 1/4"	.25	.20	6 1/2"	1.34	1.07
1 3/8"	.27	.21	7"	1.50	1.20
1 1/2"	.29	.23	7 1/2"	1.66	1.33
1 5/8"	.32	.25	8"	1.83	1.46
1 3/4"	.34	.27	9"	2.18	1.73
2"	.38	.30	10"	2.51	2.01

Charges are based on lineal feet for each piece.
Fractions of an inch, charged at next full inch.

RECTANGULAR PLATES

Over 1" thick charged on net weight plus Flame Cutting one side and one end at above extras unless Flame Cutting all edges is specified when charge will be for two sides and two ends. 1" thick and under will be charged for gross weight of nearest stock width and Flame Cutting of 4 edges.

CIRCULAR PLATES

Charged on the weight of a square plate 1/2" larger than the circle plus the above extras on the circumference of the circle.

RINGS

Charged on the weight of a square plate 1/2" larger than the ring plus the above extras on the inner and outer circumferences.

SKETCHES WITH STRAIGHT SIDES

Over 1" thick charged on the weight of plate 1/2" larger than smallest rectangle from which sketch can be cut plus above extras per lineal foot of perimeter of sketch. 1" thick and under will be charged for gross weight of nearest stock width.

UNUSUAL SKETCHES

Including curves, re-entrants cuts, etc.: Extras quoted on application.

When Sketch Plates can be nested to avoid excessive waste, charge will be made accordingly.

CUTTING EXTRAS—Concluded

SHEET SHEARING EXTRAS

EXCEPT STAINLESS STEEL SHEETS

Charge per 100 lbs.

Gage	TO LENGTH ONLY 5 Ft. and Over	Under 5 Ft. to 3 Ft.	Under 3 Ft. to 2 Ft.	Under 2 Ft. to 1 Ft.	TO WIDTH ONLY 6 In. and Over	Over 4 In. to 5 15/16 In.	Over 3 In. to 4 In., Incl.	Over 2 In. to 3 In., Incl.	1 In. to 2 In., Incl.	Under 1 In.
†3⁄16 No. 8	$0.25	$0.35	$0.45	$0.55	$0.25	$0.30	$0.35	$0.45	$0.70	$0.95
9 & 10	.30	.40	.50	.60	.30	.35	.40	.50	.75	1.00
11 & 12	.35	.45	.55	.65	.35	.40	.45	.50	.75	1.00
13 & 14	.40	.50	.60	.70	.40	.45	.50	.70	.80	1.10
15 & 16	.45	.55	.65	.75	.45	.45	.50	.75	.90	1.10
17 & 18	.50	.60	.70	.80	.50	.55	.60	.80	1.00	1.30
19 & 20	.55	.65	.75	.85	.55	.60	.70	.90	1.15	1.50
21 & 22	.60	.70	.80	.90	.60	.70	.80	1.00	1.25	1.60
23 & 24	.65	.75	.85	.95	.65	.75	.90	1.10	1.50	1.75
25 & 26	.70	.80	.90	1.00	.70	.90	1.00	1.25	1.50	2.00
27	.75	.85	.95	1.05	.75	1.00	1.10	1.40	1.75	2.50
28	.80	.90	1.00	1.10	.80	1.00	1.10	1.40	1.75	2.50
29	.85	.95	1.05	1.15	.85	1.00	1.10	1.40	1.75	2.50
30	.90	1.00	1.10	1.20	.90	1.00	1.10	1.40	1.75	2.50

For shearing to widths under 6 inches and to lengths see below.

TO LENGTH AND WIDTH

Charge per 100 lbs.

Gage	SHEARING TO WIDTH OF 6" AND OVER, AND CUTTING TO LENGTH 5 ft. and Over	Under 5 ft. to 3 ft.	Under 3 ft. to 2 ft.	Under 2 ft. to 1 ft.	Under 1 ft. to 6" Incl.
†3⁄16 No. 8	$0.45	$0.55	$0.65	$0.75	$0.95
9 & 10	.50	.60	.70	.80	1.00
11 & 12	.55	.65	.75	.85	1.10
13 & 14	.60	.70	.80	.90	1.20
15 & 16	.65	.75	.85	.95	1.30
17 & 18	.70	.80	.90	1.00	1.50
19 & 20	.75	.85	.95	1.05	1.50
21 & 22	.80	.90	1.00	1.10	1.50
23 & 24	.85	.95	1.05	1.15	1.50
25 & 26	.90	1.00	1.10	1.20	2.00
27	.95	1.05	1.15	1.25	2.00
28	1.00	1.10	1.20	1.30	2.00
29	1.05	1.15	1.25	1.35	2.00
30	1.10	1.20	1.30	1.40	2.00

†All 3⁄16" Material wider than 6", see Plate Cutting Schedule.
For shearing to widths under 6 inches and to length.

For lengths of 3' and over.........3 times width charge
" " under 3' to 1' 0"......3½ " " "
" " under 1'..............4 " " "

All sheets cut to size charged on gross weight.
Above charges apply on all Floor Plates lighter than No. 8 Gage.

TUBE CUTTING EXTRAS

Diameter	Cents per Cut	Diameter	Cents per Cut
1" to 2"	$0.025	4"	$0.06
2½"	.03	4½"	.10
3" and 3¼"	.035	5"	.15
3½" and 3¾"	.04	6"	.25

EXTRA GAGE

2" #11 Gage	$0.05	4" #9 Gage	$0.07

Minimum cutting charge **15c** net.

TRADE PRACTICES

QUOTATIONS—Quotations made by this company, or its representatives are subject to change without notice or to prior sale and, unless otherwise agreed, are binding only for immediate acceptance. All sales are made subject to strikes, accidents, or other delays beyond our control.

CONFIRMING ORDERS—Confirming orders should have the word "Confirmation" clearly marked on the face of the order. Confirming orders which are not marked in this manner may be mistaken for "original" orders and consequently duplicated. We cannot be responsible for expense and inconveniences that result in such instances.

TERMS—Our terms are 30 days net, or ½ of 1% for cash in 10 days from date of invoice, unless otherwise quoted.

DELIVERIES—Material in our warehouse is usually shipped the day order is received. Telephone orders are accepted at the risk of the purchaser as deliveries made before receipt of confirming orders are for the special convenience of the purchaser.

Promises of delivery on special orders (including mill orders) are estimated as accurately as possible and although we do our utmost to make such deliveries on time, we cannot guarantee to do so.

WRAPPING AND BOXING—Tariff Regulations specify that Cold Finished Shafting and Screw Stock when shipped by express must be wrapped or boxed the entire length and the following wrapping or boxing extras will apply:

Wrapping entire length, per 100 lbs	$0.25
Minimum charge for wrapping, net	.25
Boxing, per 100 lbs	.50
Minimum charge for boxing, net	.75

CRATING—All grades of Cold Rolled, Vitrenamel, Galvannealed and Long Terne Sheets will be crated for shipment unless instructions to the contrary are received from the customer in which case he will assume full responsibility for the condition of the material. Unless otherwise specified skeleton crates will be used and the following charges will be made per 100 lbs., based on 500 lbs. or less per crate:

Skeleton Crating	$0.40 Cwt	$2.00 minimum
Full Crating	.95 Cwt	4.75 minimum

CLAIMS—Consignees (customers) should carefully check all shipments when offered for delivery by carriers. If shortage or damage exists, shipments should not be refused but consignee should demand that carrier's representative acknowledge, over his signature, on original freight bill (consignee's copy of freight bill will suffice for truck shipments) a statement of the extent of the loss or damage incurred; likewise, when receipting for the goods, consignee must make corresponding notation of the loss or damage over his signature on the carrier's delivery receipt. Unless freight bills and delivery receipts are so noted, claims will not be honored by the carriers.

If a carload shipment is received in a damaged condition, the carrier's representative should be called to inspect contents of car before unloading and should be required to furnish, over his signature, evidence of condition of material, either on face of original freight bill or on separate inspection report for use in substantiating freight claim if latter is eventually filed.

Unless we are instructed to the contrary, any valuation in excess of $50.00 on Express Shipments will be insured and all Parcel Post shipments will be insured for full value. When a customer requests delivery by a carrier, other than Express or Parcel Post, whose charges do not cover the insuring of the material, we will not insure the shipment unless specifically requested to do so.

Claims for loss or damage must be filed with railroads, motor truck lines, Railway Express Agency and water carriers within 9 months of receipt of shipments; claims against U. S. Post Office Department must be filed within 6 months of date of mailing.

DEFECTIVE MATERIAL—Our material is carefully inspected on receipt from our suppliers. We use every precaution to insure shipment of material of prime quality in first class condition. In case of claims because of material incorrectly supplied or which proved defective when properly worked or used, we guarantee to replace such material but under no circumstances can we be responsible for any liabilities beyond this. We cannot honor claims for handling or labor expended on defective material or other costs incurred as a result of the material being defective. If material appears to be unsatisfactory for use, please notify us at once and arrangements will be made for inspection. Do not return material unless asked to do so.

USEFUL INFORMATION

To find circumference of a circle multiply diameter by 3.1416.

To find diameter of a circle multiply circumference by .31831.

To find area of a circle multiply square of diameter by .7854.

To find area of a triangle multiply base by ½ perpendicular height.

To find surface of a ball multiply square of diameter by 3.1416.

To find solidity of a sphere multiply cube of diameter by .5236.

To find side of an equal square multiply diameter by .8862.

To find cubic inches in a ball multiply cube of diameter by .5236.

To find cubic contents of a cone, multiply area of base by ⅓ the altitude.

Doubling the diameter of a pipe increases its capacity four times.

A gallon of water (U. S. standard) weights 8⅓ lbs. and contains 231 cubic inches.

A cubic foot of water contains 7½ gallons, 1728 cubic inches, and weighs 62½ lbs.

To find the pressure in pounds per square inch of a column of water multiply the height of the column in feet by .434.

Steam rising from water at its boiling point (212 degrees) has a pressure equal to the atmosphere (14.7 lbs. to the square inch).

A standard horse power: The evaporation of 30 lbs. of water per hour from a feed water temperature of 100° F. into steam at 70 lbs. gauge pressure.

To find capacity of tanks any size; given dimensions of a cylinder in inches, to find its capacity in U. S. gallons: Square the diameter, multiply by the length and by .0034.

To ascertain heating surface in tubular boilers multiply ⅔ the circumference of boiler by length of boiler in inches and add to it the area of all the tubes.

One-sixth of tensile strength of plate multiplied by thickness of plate and divided by one-half the diameter of boiler gives safe working pressure for tubular boilers. For marine boilers add 20 per cent. for drilled holes.

To find the capacity of an air compressor in cubic feet of free air per minute: Multiply the area of low pressure cylinder (on compound compressor), or area of simple compressor cylinder in square inches, by the stroke in inches, and divide by 1728; and multiply this result—

(a) In single acting, simple or compound, by the R. P. M.

(b) Double acting, simple or compound, by 2 × the R. P. M.

(c) Duplex double acting, by 4 × R. P. M.

CIRCUMFERENCES AND AREAS OF CIRCLES

Diameter in Inches	CIRCUMFERENCE Feet	CIRCUMFERENCE Inches	Area Square Feet
1/16		13/64	
1/8		25/64	
3/16		19/32	
1/4		25/32	
5/16		63/64	
3/8		1 11/64	
7/16		1 3/8	
1/2		1 37/64	
9/16		1 49/64	
5/8		1 31/32	
11/16		2 11/64	
3/4		2 23/64	
13/16		2 35/64	
7/8		2 3/4	
15/16		2 15/16	
1		3 9/64	.0055
1 1/8		3 9/16	.0069
1 1/4		3 15/16	.0085
1 3/8		4 5/16	.0103
1 1/2		4 11/16	.0123
1 5/8		5 1/8	.0144
1 3/4		5 1/2	.0167
1 7/8		5 7/8	.0192
2		6 5/16	.0218
2 1/8		6 11/16	.0246
2 1/4		7 1/16	.0276
2 3/8		7 7/16	.0308
2 1/2		7 7/8	.0341
2 5/8		8 1/4	.0376
2 3/4		8 5/8	.0412
2 7/8		9 1/16	.0451
3		9 7/16	.0491
3 1/8		9 13/16	.0533
3 1/4		10 3/16	.0576
3 3/8		10 5/8	.0621
3 1/2		11	.0668
3 5/8		11 3/8	.0717
3 3/4		11 3/4	.0767
3 7/8	1	3/16	.0819
4	1	9/16	.0873
4 1/8	1	15/16	.0928
4 1/4	1	1 3/8	.0985
4 3/8	1	1 3/4	.1044
4 1/2	1	2 1/8	.1104
4 5/8	1	2 1/2	.1167
4 3/4	1	2 15/16	.1231
4 7/8	1	3 5/16	.1296
5	1	3 11/16	.1364
5 1/8	1	4 1/8	.1433
5 1/4	1	4 1/2	.1503
5 3/8	1	4 7/8	.1576
5 1/2	1	5 1/4	.1650
5 5/8	1	5 11/16	.1726
5 3/4	1	6 1/16	.1803
5 7/8	1	6 7/16	.1883
6	1	6 7/8	.1964
6 1/8	1	7 1/4	.2046
6 1/4	1	7 5/8	.2131
6 3/8	1	8	.2217
6 1/2	1	8 7/16	.2304
6 5/8	1	8 13/16	.2394
6 3/4	1	9 3/16	.2485
6 7/8	1	9 5/8	.2578
7	1	10	.2673

Diameter in Inches	CIRCUMFERENCE Feet	CIRCUMFERENCE Inches	Area Square Feet
7 1/8	1	10 3/8	.2769
7 1/4	1	10 3/4	.2867
7 3/8	1	11 3/16	.2967
7 1/2	1	11 9/16	.3068
7 5/8	1	11 15/16	.3171
7 3/4	2	3/8	.3276
7 7/8	2	3/4	.3382
8	2	1 1/8	.3491
8 1/8	2	1 1/2	.3601
8 1/4	2	1 15/16	.3712
8 3/8	2	2 5/16	.3826
8 1/2	2	2 11/16	.3941
8 5/8	2	3 1/8	.4057
8 3/4	2	3 1/2	.4176
8 7/8	2	3 7/8	.4296
9	2	4 1/4	.4418
9 1/8	2	4 11/16	.4541
9 1/4	2	5 1/16	.4667
9 3/8	2	5 7/16	.4794
9 1/2	2	5 7/8	.4922
9 5/8	2	6 1/4	.5053
9 3/4	2	6 5/8	.5185
9 7/8	2	7	.5319
10	2	7 7/16	.5454
10 1/8	2	7 13/16	.5591
10 1/4	2	8 3/16	.5730
10 3/8	2	8 5/8	.5871
10 1/2	2	9	.6013
10 5/8	2	9 3/8	.6157
10 3/4	2	9 3/4	.6303
10 7/8	2	10 3/16	.6450
11	2	10 9/16	.6600
11 1/8	2	10 15/16	.6750
11 1/4	2	11 5/16	.6903
11 3/8	2	11 3/4	.7057
11 1/2	3	1/8	.7213
11 5/8	3	1/2	.7371
11 3/4	3	15/16	.7530
11 7/8	3	1 5/16	.7691
12	3	1 11/16	.7854
12 1/8	3	2 1/16	.8018
12 1/4	3	2 1/2	.8185
12 3/8	3	2 7/8	.8353
12 1/2	3	3 1/4	.8522
12 5/8	3	3 11/16	.8694
12 3/4	3	4 1/16	.8866
12 7/8	3	4 7/16	.9041
13	3	4 13/16	.9217
13 1/8	3	5 1/4	.9396
13 1/4	3	5 5/8	.9576
13 3/8	3	6	.9757
13 1/2	3	6 7/16	.9940
13 5/8	3	6 13/16	1.013
13 3/4	3	7 3/16	1.031
13 7/8	3	7 9/16	1.050
14	3	8	1.069
14 1/8	3	8 3/8	1.088
14 1/4	3	8 3/4	1.108
14 3/8	3	9 3/16	1.127
14 1/2	3	9 9/16	1.147
14 5/8	3	9 15/16	1.167
14 3/4	3	10 5/16	1.187
14 7/8	3	10 3/4	1.207
15	3	11 1/8	1.227

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CIRCUMFERENCES AND AREAS OF CIRCLES

(Continued)

Diameter in Inches	CIRCUMFERENCE		Area Square Feet	Diameter in Inches	CIRCUMFERENCE		Area Square Feet
	Feet	Inches			Feet	Inches	
15⅛	3	11½	1.248	23	6	¼	2.885
15¼	3	11⅞	1.268	23⅛	6	⅝	2.917
15⅜	4	¼	1.289	23¼	6	1	2.948
15½	4	¹¹⁄₁₆	1.310	23⅜	6	1⅜	2.980
15⅝	4	1¹⁄₁₆	1.332	23½	6	1¹³⁄₁₆	3.012
15¾	4	1½	1.353	23⅝	6	2³⁄₁₆	3.044
15⅞	4	1⅞	1.375	23¾	6	2⅝	3.076
16	4	2¼	1.396	23⅞	6	3	3.109
16⅛	4	2⅝	1.418	24	6	3⅜	3.142
16¼	4	3¹⁄₁₆	1.440	24¼	6	4³⁄₁₆	3.207
16⅜	4	3⁷⁄₁₆	1.463	24½	6	4¹⁵⁄₁₆	3.274
16½	4	3¹³⁄₁₆	1.485	24¾	6	5¾	3.341
16⅝	4	4¼	1.507	25	6	6½	3.409
16¾	4	4⅝	1.530	25¼	6	7⁵⁄₁₆	3.477
16⅞	4	5	1.553	25½	6	8⅛	3.547
17	4	5⅜	1.576	25¾	6	8⅞	3.616
17⅛	4	5¾	1.600	26	6	9⅝	3.687
17¼	4	6³⁄₁₆	1.623	26¼	6	10⁷⁄₁₆	3.758
17⅜	4	6⁹⁄₁₆	1 647	26½	6	11¼	3.830
17½	4	6¹⁵⁄₁₆	1.670	26¾	7	0	3.903
17⅝	4	7⅜	1.694	27	7	¹³⁄₁₆	3.976
17¾	4	7¾	1.718	27¼	7	1⅝	4.050
17⅞	4	8⅛	1.743	27½	7	2⅜	4.125
18	4	8½	1.767	27¾	7	3⅛	4.200
18⅛	4	8¹⁵⁄₁₆	1.792	28	7	3¹⁵⁄₁₆	4.276
18¼	4	9⁵⁄₁₆	1.817	28¼	7	4¾	4.353
18⅜	4	9¾	1.842	28½	7	5½	4.430
18½	4	10⅛	1.867	28¾	7	6¼	4.508
18⅝	4	10½	1.892	29	7	7¹⁄₁₆	4.587
18¾	4	10⅞	1.918	29¼	7	7⅞	4.666
18⅞	4	11⁵⁄₁₆	1.943	29½	7	8⅝	4.746
19	4	11¹¹⁄₁₆	1.969	29¾	7	9⁷⁄₁₆	4.827
19⅛	5	¹⁄₁₆	1.995	30	7	10¼	4.909
19¼	5	⁷⁄₁₆	2.021	30¼	7	11	4.991
19⅜	5	⅞	2.047	30½	7	11¹³⁄₁₆	5.074
19½	5	1¼	2.074	30¾	8	⁹⁄₁₆	5.157
19⅝	5	1⅝	2.101	31	8	1⅜	5.241
19¾	5	2	2.127	31¼	8	2³⁄₁₆	5.326
19⅞	5	2⁷⁄₁₆	2.155	31½	8	2¹⁵⁄₁₆	5.412
20	5	2¹³⁄₁₆	2.182	31¾	8	3¾	5.498
20⅛	5	3¼	2.209	32	8	4½	5.585
20¼	5	3⅝	2.237	32¼	8	5⁵⁄₁₆	5.673
20⅜	5	4	2.264	32½	8	6¹⁄₁₆	5.761
20½	5	4⅜	2.292	32¾	8	6⅞	5.850
20⅝	5	4¾	2.320	33	8	7¹¹⁄₁₆	5.940
20¾	5	5³⁄₁₆	2.348	33¼	8	8⁷⁄₁₆	6.030
20⅞	5	5⁹⁄₁₆	2.377	33½	8	9¼	6.121
21	5	5¹⁵⁄₁₆	2.405	33¾	8	10	6.213
21⅛	5	6⅜	2.434	34	8	10¹³⁄₁₆	6.305
21¼	5	6¾	2.463	34¼	8	11⅝	6.398
21⅜	5	7⅛	2.492	34½	9	⅜	6.492
21½	5	7½	2.521	34¾	9	1³⁄₁₆	6.586
21⅝	5	7⅞	2.551	35	9	1¹⁵⁄₁₆	6.681
21¾	5	8⁵⁄₁₆	2.580	35¼	9	2¾	6.777
21⅞	5	8¹¹⁄₁₆	2.610	35½	9	3½	6.874
22	5	9¹⁄₁₆	2.640	35¾	9	4⁵⁄₁₆	6.971
22⅛	5	9½	2.670	36	9	5¹⁄₁₆	7.069
22¼	5	9⅞	2.700	36¼	9	5⅞	7.167
22⅜	5	10¼	2.730	36½	9	6⅝	7.266
22½	5	10⅝	2.761	36¾	9	7⁷⁄₁₆	7.366
22⅝	5	11¹⁄₁₆	2.792	37	9	8¼	7.467
22¾	5	11⁷⁄₁₆	2.823	37¼	9	9	7.568
22⅞	5	11¹³⁄₁₆	2.854	37½	9	9¹³⁄₁₆	7.670

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CIRCUMFERENCES AND AREAS OF CIRCLES

(Continued)

Diameter in Inches	CIRCUMFERENCE		Area Square Feet
	Feet	Inches	
37¾	9	10 9/16	7.773
38	9	11 3/8	7.876
38¼	10	1/8	7.980
38½	10	15/16	8.084
38¾	10	1 3/4	8.190
39	10	2 1/2	8.296
39¼	10	3 1/4	8.403
39½	10	4 1/16	8.510
39¾	10	4 7/8	8.618
40	10	5 5/8	8.727
40¼	10	6 7/16	8.836
40½	10	7 1/4	8.946
40¾	10	8	9.057
41	10	8 13/16	9.168
41¼	10	9 9/16	9.281
41½	10	10 3/8	9.393
41¾	10	11 1/8	9.507
42	10	11 15/16	9.621
42¼	11	11/16	9.736
42½	11	1 1/2	9.852
42¾	11	2 5/16	9.968
43	11	3 1/16	10.085
43¼	11	3 7/8	10.202
43½	11	4 5/8	10.321
43¾	11	5 7/16	10.440
44	11	6 3/16	10.559
44¼	11	7	10.680
44½	11	7 13/16	10.801
44¾	11	8 9/16	10.922
45	11	9 3/8	11.045
45¼	11	10 1/8	11.168
45½	11	10 15/16	11.291
45¾	11	11 11/16	11.416
46	12	1/2	11.541
46¼	12	1 5/16	11.667
46½	12	2 1/16	11.793
46¾	12	2 7/8	11.920
47	12	3 5/8	12.048
47¼	12	4 7/16	12.177
47½	12	5 3/16	12.306
47¾	12	6	12.436
48	12	6 13/16	12.566
48¼	12	7 9/16	12.698
48½	12	8 3/8	12.830
48¾	12	9 1/8	12.962
49	12	9 15/16	13.095
49¼	12	10 11/16	13.229
49½	12	11 1/2	13.364
49¾	13	5/16	13.499
50	13	1 1/16	13.635
50¼	13	1 7/8	13.772
50½	13	2 5/8	13.910
50¾	13	3 7/16	14.048
51	13	4 3/16	14.186
51¼	13	5	14.326
51½	13	5 3/4	14.466
51¾	13	6 9/16	14.607
52	13	7 5/16	14.748
52¼	13	8 1/8	14.890
52½	13	8 15/16	15.033
52¾	13	9 11/16	15.177
53	13	10 1/2	15.321
53¼	13	11 1/4	15.466
53½	14	1/16	15.611
53¾	14	7/8	15.757
54	14	1 5/8	15.904
54¼	14	2 7/16	16.052
54½	14	3 3/16	16.200
54¾	14	4	16.349
55	14	4 3/4	16.499
55¼	14	5 9/16	16.649
55½	14	6 5/16	16.800
55¾	14	7 1/8	16.952
56	14	7 7/8	17.104
56¼	14	8 11/16	17.257
56½	14	9 1/2	17.411
56¾	14	10 1/4	17.565
57	14	11 1/16	17.721
57¼	14	11 13/16	17.876
57½	15	5/8	18.033
57¾	15	1 3/8	18.190
58	15	2 3/16	18.348
58¼	15	3	18.506
58½	15	3 3/4	18.666
58¾	15	4 9/16	18.825
59	15	5 5/16	18.986
59¼	15	6 1/8	19.147
59½	15	6 7/8	19.309
59¾	15	7 11/16	19.472
60	15	8 1/2	19.635
60¼	15	9 1/4	19.799
60½	15	10 1/16	19.964
60¾	15	10 13/16	20.129
61	15	11 5/8	20.295
61¼	16	7/16	20.462
61½	16	1 3/16	20.629
61¾	16	2	20.797
62	16	2 3/4	20.966
62¼	16	3 9/16	21.135
62½	16	4 5/16	21.305
62¾	16	5 1/8	21.476
63	16	5 15/16	21.648
63¼	16	6 11/16	21.820
63½	16	7 1/2	21.993
63¾	16	8 1/4	22.166
64	16	9 1/16	22.340
64¼	16	9 13/16	22.515
64½	16	10 5/8	22.691
64¾	16	11 3/8	22.867
65	17	3/16	23.044
65¼	17	1	23.221
65½	17	1 3/4	23.400
65¾	17	2 9/16	23.579
66	17	3 5/16	23.758
66¼	17	4 1/8	23.939
66½	17	4 7/8	24.120
66¾	17	5 11/16	24.301
67	17	6 7/16	24.484
67¼	17	7 1/4	24.667
67½	17	8 1/16	24.851
67¾	17	8 13/16	25.035
68	17	9 5/8	25.220
68¼	17	10 3/8	25.406
68½	17	11 3/16	25.592
68¾	17	11 15/16	25.779
69	18	3/4	25.967

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CIRCUMFERENCES AND AREAS OF CIRCLES

(Concluded)

Diameter in Inches	CIRCUMFERENCE		Area Square Feet	Diameter in Inches	CIRCUMFERENCE		Area Square Feet
	Feet	Inches			Feet	Inches	
69¼	18	1 9/16	26.156	93½	24	5 ¾	47.682
69½	18	2 5/16	26.345	94	24	7 5/16	48.193
69¾	18	3 ⅛	26.535	94½	24	8 ⅞	48.707
70	18	3 15/16	26.725	95	24	10 7/16	49.224
70¼	18	4 11/16	26.917	95½	25	0	49.743
70½	18	5 ½	27.109	96	25	1 9/16	50.266
70¾	18	6 ¼	27.301	96½	25	3 3/16	50.791
71	18	7 1/16	27.494	97	25	4 ¾	51.318
71¼	18	7 13/16	27.688	97½	25	6 5/16	51.849
71½	18	8 ⅝	27.883	98	25	7 ⅞	52.382
71¾	18	9 7/16	28.078	98½	25	9 7/16	52.918
72	18	10 3/16	28.274	99	25	11	53.456
72½	18	11 ¾	28.668	99½	26	9/16	53.998
73	19	1 5/16	29.065	100	26	2 3/16	54.542
73½	19	2 15/16	29.465	100½	26	3 ¾	55.088
74	19	4 ½	29.867	101	26	5 5/16	55.638
74½	19	6 1/16	30.272	101½	26	6 ⅞	56.190
75	19	7 ⅝	30.680	102	26	8 7/16	56.745
75½	19	9 3/16	31.090	102½	26	10	57.303
76	19	10 ¾	31.503	103	26	11 9/16	57.863
76½	20	5/16	31.919	103½	27	1 3/16	58.426
77	20	1 ⅞	32.338	104	27	2 ¾	58.992
77½	20	3 ½	32.759	104½	27	4 5/16	59.561
78	20	5 1/16	33.183	105	27	5 ⅞	60.132
78½	20	6 ⅝	33.610	105½	27	7 7/16	60.706
79	20	8 3/16	34.039	106	27	9	61.283
79½	20	9 ¾	34.472	106½	27	10 9/16	61.863
80	20	11 5/16	34.907	107	28	⅛	62.445
80½	21	⅞	35.344	107½	28	1 ¾	63.030
81	21	2 7/16	35.785	108	28	3 5/16	63.617
81½	21	4 1/16	36.228	108½	28	4 ⅞	64.208
82	21	5 ⅝	36.674	109	28	6 7/16	64.801
82½	21	7 3/16	37.122	109½	28	8	65.397
83	21	8 ¾	37.574	110	28	9 9/16	65.995
83½	21	10 5/16	38.028	110½	28	11 ⅛	66.597
84	21	11 ⅞	38.485	111	29	11/16	67.201
84½	22	1 ½	38.944	111½	29	2 5/16	67.808
85	22	3 1/16	39.406	112	29	3 ⅞	68.417
85½	22	4 ⅝	39.871	112½	29	5 7/16	69.029
86	22	6 3/16	40.339	113	29	7	69.644
86½	22	7 ¾	40.809	113½	29	8 9/16	70.262
87	22	9 5/16	41.283	114	29	10 ⅛	70.882
87½	22	10 ⅞	41.758	114½	29	11 11/16	71.505
88	23	7/16	42.237	115	30	1 5/16	72.131
88½	23	2 1/16	42.718	115½	30	2 ⅞	72.760
89	23	3 ⅝	43.202	116	30	4 7/16	73.391
89½	23	5 3/16	43.689	116½	30	6	74.025
90	23	6 ¾	44.179	117	30	7 9/16	74.662
90½	23	8 5/16	44.671	117½	30	9 ⅛	75.302
91	23	9 ⅞	45.166	118	30	10 11/16	75.944
91½	23	11 7/16	45.664	118½	31	5/16	76.589
92	24	1	46.164	119	31	1 ⅞	77.236
92½	24	2 ⅝	46.667	119½	31	3 7/16	77.887
93	24	4 3/16	47.173	120	31	5	78.540

We can supply circles from Stock in any diameter up to 120". Write for prices.

THEORETICAL WEIGHT OF STEEL CIRCLES

Diam.	THICKNESS OF CIRCLES											
In.	⅛	3/16	¼	5/16	⅜	7/16	½	9/16	⅝	¾	⅞	1
1	.028	.042	.056	.069	.083	.097	.111	.125	.139	.167	.195	.223
2	.111	.166	.222	.278	.333	.389	.444	.502	.557	.668	.779	.892
3	.249	.375	.500	.626	.749	.874	.999	1.13	1.25	1.50	1.75	2.01
4	.444	.666	.888	1.11	1.33	1.55	1.78	2.01	2.23	2.67	3.12	3.57
5	.693	1.04	1.388	1.74	2.08	2.43	2.78	3.14	3.48	4.18	4.87	5.58
6	.998	1.50	2.00	2.51	3.00	3.50	4.00	4.52	5.01	6.01	7.01	8.30
7	1.36	2.04	2.72	3.41	4.08	4.76	5.44	6.15	6.82	8.19	9.55	10.93
8	1.77	2.66	3.55	4.45	5.33	6.22	7.11	8.03	8.91	10.69	12.47	14.28
9	2.25	3.37	4.50	5.69	6.74	7.87	9.00	10.16	11.28	13.53	15.78	18.07
10	2.77	4.16	5.55	6.96	8.33	9.72	11.11	12.54	13.93	16.71	19.49	22.31
11	3.35	5.04	6.72	8.42	10.07	11.76	13.44	15.18	16.85	20.21	23.58	26.99
12	3.99	5.99	8.00	10.02	11.99	13.99	15.99	18.06	20.05	24.06	28.06	32.12
13	4.69	7.03	9.38	11.76	14.07	16.42	18.77	21.11	23.53	28.23	32.93	37.70
14	5.43	8.16	10.88	13.64	16.32	19.04	21.77	24.58	26.29	32.74	38.19	43.72
15	6.24	9.37	12.49	15.66	18.73	21.86	24.99	28.22	31.33	37.59	43.84	50.19
16	7	11	15	18	22	25	29	32	35	42	49	56
17	8	12	16	20	24	28	32	36	40	48	56	64
18	9	14	18	23	27	32	36	40	45	54	63	71
19	10	15	20	25	30	35	40	45	50	60	70	80
20	11	17	23	28	34	39	45	50	55	66	77	88
21	12	19	25	31	37	43	49	55	61	73	85	97
22	14	20	27	34	41	47	54	60	67	80	93	107
23	15	22	30	37	44	52	59	66	73	88	102	117
24	16	24	32	40	48	56	64	71	79	95	111	127
25	18	26	35	44	53	61	70	78	86	103	121	138
26	19	28	38	47	56	66	75	84	93	112	131	149
27	20	30	41	51	61	71	81	91	101	121	141	161
28	22	33	44	55	65	76	87	97	108	130	152	173
29	24	35	47	59	71	82	94	104	116	139	163	186
30	25	38	50	63	75	88	100	112	124	149	174	199
31	27	40	54	67	80	94	107	119	133	159	186	212
32	29	43	57	71	86	100	114	127	141	170	198	226
33	30	45	61	76	91	106	121	135	150	180	211	241
34	32	48	65	81	97	113	129	144	160	192	224	255
35	34	51	68	85	102	119	136	152	169	203	237	271
36	36	54	72	90	108	126	144	162	180	216	252	288
37	38	57	76	95	115	134	153	172	191	229	267	306
38	40	60	80	100	121	141	161	181	201	241	281	322
39	42	64	85	106	127	148	169	190	212	254	296	338
40	45	67	89	111	134	156	178	200	223	267	312	356
41	47	70	94	117	141	164	187	211	234	281	327	374
42	49	74	98	123	148	172	197	221	246	295	344	394
43	52	77	103	129	155	180	206	232	258	309	360	412
44	54	81	108	135	162	188	215	242	269	323	377	430
45	56	85	113	141	169	197	225	253	282	338	394	450
46	59	88	118	147	177	206	235	265	294	353	412	475
47	62	92	123	154	185	215	246	277	308	369	430	492
48	64	96	128	160	193	225	257	289	321	385	449	514
49	67	100	134	167	201	234	267	301	334	401	467	534
50	70	105	139	174	209	244	279	313	348	418	487	558
51	....	109	145	181	217	253	289	325	362	434	506	578
52	....	113	151	188	226	263	301	339	376	452	527	602
53	....	117	156	195	235	273	313	352	391	469	547	626
54	....	122	162	203	244	284	325	365	406	487	568	650
55	....	126	168	210	253	295	337	379	421	505	589	674
56	....	131	175	218	262	305	349	393	436	524	610	698
57	....	136	181	226	272	317	362	407	453	543	633	724
58	....	141	187	234	281	328	375	421	468	562	655	750
59	....	145	194	242	291	339	387	436	484	581	678	774
60	....	150	200	250	301	351	401	451	501	601	701	802
61	....	155	207	259	311	362	414	466	518	621	724	828
62	....	161	214	268	321	375	428	482	535	642	749	856
63	....	166	221	276	332	387	442	497	553	663	774	884
64	....	171	228	285	342	399	456	513	570	684	798	912
65	....	177	235	294	353	412	471	529	588	706	823	942
66	....	182	243	303	364	425	485	546	607	728	848	970
67	....	188	250	313	375	438	500	563	625	750	874	1000
68	....	193	257	322	386	450	515	579	643	772	900	1030
69	....	199	265	331	398	464	530	596	663	795	927	1060
70	....	205	273	341	409	477	545	613	682	818	954	1090
71	....	211	281	351	421	491	561	631	702	842	982	1122
72	....	217	289	361	433	505	577	649	722	866	1009	1154
73	....	223	297	371	445	519	593	667	742	890	1038	1186
74	....	226	305	381	458	534	610	686	763	915	1066	1220
75	....	235	313	391	470	548	626	704	783	939	1095	1252

(Continued)

THEORETICAL WEIGHT OF STEEL CIRCLES

Diam. In.	THICKNESS OF CIRCLES ¼	5/16	⅜	7/16	½	9/16	⅝	¾	⅞	1
76	322	402	482	563	643	723	804	964	1125	1286
77	330	413	495	578	660	743	825	990	1155	1320
78	339	423	508	593	678	762	847	1016	1186	1356
79	348	434	521	608	695	782	869	1043	1216	1390
80	356	445	534	623	713	802	891	1069	1247	1426
81	365	457	548	639	731	822	913	1096	1278	1462
82	374	468	561	655	749	842	936	1123	1310	1498
83	384	479	575	671	767	863	959	1151	1342	1534
84	393	491	589	687	786	884	982	1179	1375	1572
85	402	503	603	704	805	905	1006	1207	1408	1610
86	412	515	618	721	824	926	1029	1235	1441	1648
87	422	527	632	738	843	948	1054	1265	1475	1686
88	431	539	647	755	863	970	1078	1294	1509	1726
89	441	551	661	771	882	992	1102	1323	1543	1764
90	451	564	677	789	902	1015	1128	1353	1579	1804
91	461	576	692	807	922	1037	1153	1383	1614	1844
92	471	589	707	825	943	1060	1178	1414	1649	1886
93	482	602	722	843	963	1084	1204	1445	1686	1926
94	492	615	738	861	984	1107	1230	1476	1722	1968
95	503	628	754	879	1005	1131	1256	1507	1759	2010
96	513	641	769	897	1026	1154	1282	1538	1795	2052
97	524	654	785	916	1047	1178	1309	1570	1832	2094
98	535	668	801	935	1069	1202	1336	1603	1870	2138
99	546	682	818	954	1091	1227	1363	1636	1908	2182
100	557	696	835	974	1113	1252	1391	1669	1948	2226
101	568	710	852	994	1136	1278	1420	1704	1988	2272
102	579	724	869	1014	1158	1303	1448	1738	2027	2317
103	591	739	886	1034	1182	1329	1477	1772	2067	2363
104	602	753	903	1054	1204	1355	1505	1806	2107	2409
105	614	768	921	1074	1228	1381	1534	1841	2148	2455
106	626	782	939	1095	1251	1408	1564	1877	2189	2502
107	637	797	956	1116	1275	1434	1593	1912	2231	2550
108	649	812	974	1136	1299	1461	1623	1948	2273	2598
109	662	827	992	1158	1323	1488	1653	1984	2315	2646
110	673	842	1010	1179	1347	1516	1684	2021	2358	2695
111	686	857	1028	1200	1372	1543	1715	2058	2401	2744
112	693	873	1048	1222	1397	1571	1746	2095	2444	2793
113	711	889	1066	1244	1422	1599	1777	2133	2488	2844
114	724	904	1085	1266	1447	1628	1809	2171	2532	2894
115	736	920	1104	1288	1473	1657	1841	2209	2577	2945
116	749	936	1124	1311	1498	1686	1873	2247	2622	2997
117	762	953	1143	1334	1524	1715	1905	2286	2667	3048
118	775	969	1163	1357	1550	1744	1938	2326	2713	3101
119	788	985	1183	1380	1577	1774	1971	2365	2759	3154
120	802	1002	1203	1403	1604	1804	2005	2406	2807	3208
121	815	1019	1223	1426	1630	1834	2038	2445	2853	3260
122	829	1036	1243	1450	1657	1864	2072	2486	2900	3314
123	842	1053	1263	1474	1685	1895	2106	2527	2948	3369
124	856	1070	1284	1498	1712	1926	2140	2568	2996	3424
125	870	1087	1305	1522	1740	1957	2175	2610	3045	3480
126	884	1105	1326	1547	1768	1989	2210	2652	3093	3535
127	898	1122	1347	1571	1796	2020	2245	2694	3143	3592
128	912	1140	1368	1596	1824	2052	2280	2736	3192	3649
129	926	1158	1390	1621	1853	2085	2316	2779	3242	3706
130	941	1176	1411	1646	1882	2117	2352	2822	3293	3764
131	955	1194	1433	1672	1911	2150	2389	2866	3344	3822
132	970	1213	1455	1698	1940	2183	2425	2910	3395	3880
133	985	1231	1477	1723	1970	2216	2462	2954	3446	3939
134	1000	1250	1500	1750	1999	2249	2499	2999	3499	3999
135	1015	1268	1522	1775	2030	2284	2537	3044	3551	4059
136	1029	1286	1543	1801	2058	2315	2572	3087	3601	4116
137	1044	1305	1566	1827	2088	2349	2610	3132	3654	4177
138	1059	1324	1589	1854	2119	2384	2649	3178	3708	4238
139	1075	1344	1612	1881	2150	2418	2687	3225	3762	4300
140	1090	1363	1636	1908	2181	2453	2726	3271	3816	4362
141	1106	1383	1659	1936	2212	2489	2765	3318	3871	4424
142	1122	1402	1683	1963	2244	2524	2804	3365	3926	4487
143	1138	1422	1706	1991	2275	2560	2844	3413	3982	4551
144	1154	1442	1730	2019	2307	2596	2884	3461	4038	4614

U. S. GALLONS IN ROUND TANKS

For One Foot in Depth

Dia. of Tanks	No. U. S. Gals.	Cu. Ft. and Area in Sq. Ft.	Dia. of Tanks	No. U. S. Gals.	Cu. Ft. and Area in Sq. Ft.	Dia. of Tanks	No. U. S. Gals.	Cu. Ft. and Area in Sq. Ft.
1 ft. 0 in.	5.87	.785	5 ft. 8 in.	188.66	25.22	19 ft. 0 in.	2120.90	283.53
1 1	6.89	.922	5 9	194.25	25.97	19 3	2177.10	291.04
1 2	8.	1.069	5 10	199.92	26.73	19 6	2234.	298.65
1 3	9.18	1.227	5 11	205.67	27.49	19 9	2291.70	306.35
1 4	10.44	1.396	6	211.51	28.27	20	2350.10	314.16
1 5	11.79	1.576	6 3	229.50	30.68	20 3	2409.20	322.06
1 6	13.22	1.767	6 6	248.23	33.18	20 6	2469.10	330.06
1 7	14.73	1.969	6 9	267.69	35.78	20 9	2529.60	338.16
1 8	16.32	2.182	7	287.88	38.48	21	2591.	346.36
1 9	17.99	2.405	7 3	308.81	41.28	21 3	2653.	354.66
1 10	19.75	2.640	7 6	330.48	44.18	21 6	2715.80	363.05
1 11	21.58	2.885	7 9	352.88	47.17	21 9	2779.30	371.54
2	23.50	3.142	8	376.01	50.27	22	2843.60	380.13
2 1	25.50	3.409	8 3	399.88	53.46	22 3	2908.60	388.82
2 2	27.58	3.687	8 6	424.48	56.75	22 6	2974.30	397.61
2 3	29.74	3.976	8 9	449.82	60.13	22 9	3040.80	406.49
2 4	31.99	4.276	9	475.89	63.62	23	3108.	415.48
2 5	34.31	4.587	9 3	502.70	67.20	23 3	3175.90	424.56
2 6	36.72	4.909	9 6	530.24	70.88	23 6	3244.60	433.74
2 7	39.21	5.241	9 9	558.51	74.66	23 9	3314.	443.01
2 8	41.78	5.585	10	587.52	78.54	24	3384.10	452.39
2 9	44.43	5.940	10 3	617.26	82.52	24 3	3455.	461.86
2 10	47.16	6.305	10 6	647.74	86.59	24 6	3526.60	471.44
2 11	49.98	6.681	10 9	678.95	90.76	24 9	3598.90	481.11
3	52.88	7.069	11	710.90	95.03	25	3672.	490.87
3 1	55.86	7.467	11 3	743.58	99.40	25 3	3745.80	500.74
3 2	58.92	7.876	11 6	776.99	103.87	25 6	3820.30	510.71
3 3	62.06	8.296	11 9	811.14	108.43	25 9	3895.60	520.77
3 4	65.28	8.727	12	846.03	113.10	26	3971.60	530.93
3 5	68.58	9.168	12 3	881.65	117.86	26 3	4048.40	541.19
3 6	71.97	9.621	12 6	918.	122.72	26 6	4125.90	551.55
3 7	75.44	10.085	12 9	955.09	127.68	26 9	4204.10	562.
3 8	78.99	10.559	13	992.91	132.73	27	4283.	572.56
3 9	82.62	11.045	13 3	1031.50	137.89	27 3	4362.70	583.21
3 10	86.33	11.541	13 6	1070.80	143.14	27 6	4443.10	593.96
3 11	90.13	12.048	13 9	1110.80	148.49	27 9	4524.30	604.81
4	94.	12.566	14	1151.50	153.94	28	4606.20	615.75
4 1	97.96	13.095	14 3	1193.	159.48	28 3	4688.80	626.80
4 2	102.	13.635	14 6	1235.30	165.13	28 6	4772.10	637.94
4 3	106.12	14.186	14 9	1278.20	170.87	28 9	4856.20	649.18
4 4	110.32	14.748	15	1321.90	176.71	29	4941.	660.52
4 5	114.61	15.321	15 3	1366.40	182.65	29 3	5026.60	671.96
4 6	118.97	15.90	15 6	1411.50	188.69	29 6	5112.90	683.49
4 7	123.42	16.50	15 9	1457.40	194.83	29 9	5199.90	695.13
4 8	127.95	17.10	16	1504.10	201.06	30	5287.70	706.86
4 9	132.56	17.72	16 3	1551.40	207.39	30 3	5376.20	718.69
4 10	137.25	18.35	16 6	1599.50	213.82	30 6	5465.40	730.62
4 11	142.02	18.99	16 9	1648.40	220.35	30 9	5555.40	742.64
5	146.88	19.63	17	1697.90	226.98	31	5646.10	754.77
5 1	151.82	20.29	17 3	1748.20	233.71	31 3	5737.50	766.99
5 2	156.83	20.97	17 6	1799.30	240.53	31 6	5829.70	779.31
5 3	161.93	21.65	17 9	1851.10	247.45	31 9	5922.60	791.73
5 4	167.12	22.34	18	1903.60	254.47	32	6016.20	804.25
5 5	172.38	23.04	18 3	1956.80	261.59	32 3	6110.60	816.86
5 6	177.72	23.76	18 6	2010.80	268.80	32 6	6205.70	829.58
5 7	183.15	24.48	18 9	2065.50	276.12	32 9	6301 50	842.39

31½ Gallons equal 1 Barrel.

To find the capacity of tanks greater than the largest given in the table, look in the table for a Tank of one-half of the given size and multiply its capacity by 4, or one of one-third its size and multiply its capacity by 9, etc.

FOR PLATES

See pages 18 to 20

NUMBER OF U. S. GALLONS IN RECTANGULAR TANKS

For One Foot in Depth

Width of Tank	Length of Tank																				
	ft. 2	ft. in 2 6	ft. 3	ft. in. 3 6	ft. 4	ft. in. 4 6	ft. 5	ft. in. 5 6	ft. 6	ft. in. 6 6	ft. 7	ft. in. 7 6	ft. 8	ft. in. 8 6	ft. 9	ft. in. 9 6	ft. 10	ft. in. 10 6	ft. 11	ft. in. 11 6	ft. 12
2 ft	29.92	37.40	44.88	52.36	59.84	67.32	74.81	82.29	89.77	97.25	104.73	112.21	119.69	127.17	134.65	142.13	149.61	157.09	164.57	172.05	179.53
2 6 in.	......	46.75	56.10	65.45	74.80	84.16	93.51	102.86	112.21	121.56	130.91	140.26	149.61	158.96	168.31	177.66	187.01	196.36	205.71	215.06	224.41
3	......	......	67.32	78.54	89.77	100.99	112.21	123.43	134.65	145.87	157.09	168.31	179.53	190.75	202.97	213.19	224.41	235.63	246.86	258.07	269.30
3 6 in.	......	......	......	91.64	104.73	117.82	130.91	144.00	157.09	170.18	183.27	196.36	209.45	222.54	235.63	248.73	261.82	274.90	288.00	301.09	314.18
4	......	......	......	......	119.69	134.65	149.61	164.57	179.53	194.49	209.45	224.41	239.37	254.34	269.30	284.26	299.22	314.18	329.14	344.10	359.06
4 6 in.	......	......	......	......	......	151.48	168.31	185.14	201.97	218.80	235.63	252.47	269.30	286.13	302.96	319.79	336.62	353.45	370.28	387.11	403.94
5	......	......	......	......	......	......	187.01	205.71	224.41	243.11	261.82	280.52	299.22	317.92	336.62	355.32	374.03	392.72	411.43	430.13	448.83
5 6 in.	......	......	......	......	......	......	......	226.28	246.86	267.43	288.00	308.57	329.14	349.71	370.28	390.85	411.43	432.00	452.57	473.14	493.71
6	......	......	......	......	......	......	......	......	269.30	291.74	314.18	336.62	359.06	381.50	403.94	426.39	448.83	471.27	493.71	516.15	538.59
6 6 in.	......	......	......	......	......	......	......	......	......	316.05	340.36	364.67	388.98	413.30	437.60	461.92	486.23	510.54	534.85	559.16	583.47
7	......	......	......	......	......	......	......	......	......	......	366.54	392.72	418.91	445.09	471.27	497.45	523.64	549.81	575.99	602.18	628.36
7 6 in.	......	......	......	......	......	......	......	......	......	......	......	420.78	448.83	476.88	504.93	532.98	561.04	589.08	617.14	645.19	673.24
8	......	......	......	......	......	......	......	......	......	......	......	......	478.75	508.67	538.59	568.51	598.44	628.36	658.28	688.20	718.12
8 6 in.	......	......	......	......	......	......	......	......	......	......	......	......	......	540.46	572.25	604.05	635.84	667.63	699.42	731.21	763.00
9	......	......	......	......	......	......	......	......	......	......	......	......	......	......	605.92	639.58	673.25	706.90	740.56	774.23	807.89
9 6 in.	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	675.11	710.65	746.17	781.71	817.24	852.77
10	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	748.05	785.45	822.86	860.26	897.66
10 6 in.	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	824.73	864.00	903.26	942.56
11	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	905.14	946.27	987.43
11 6 in.	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	989.29	1032.3
12	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	1077.2

CORRUGATED ARCHES—2½″ Corrugations

Length of sheet required when rise and span are given

SPAN	HEIGHT OF RISE					
	1″	2″	3″	4″	5″	6″
18″	18⅛	18 9/16	19 5/16	20¼	21½	22 15/16
19″	19⅛	19½	20¼	21 3/16	22⅜	23 11/16
20″	20⅛	20½	21 3/16	22 1/16	23 3/16	24½
21″	21⅛	21½	22⅛	23	24 9/16	25 5/16
22″	22⅛	22½	23	23⅛	24⅞	26⅛
23″	23⅛	23½	24	24 13/16	25¾	27
24″	24⅛	24 7/16	25⅜	25¾	26 11/16	27 13/16
25″	25⅛	25 7/16	26	26 11/16	27 9/16	28 11/16
26″	26⅛	26⅜	27	27⅝	28½	29½
27″	27⅛	27 7/16	27⅞	28½	29½	30½
28″	28⅛	28⅜	28¾	29½	30¼	31¼
29″	29⅛	29⅜	29 13/16	30 7/16	31¼	32 3/16
30″	30⅛	30⅜	30 13/16	31 7/16	32 3/16	33⅛
31″	31 1/16	31⅜	31 13/16	32 7/16	33⅛	34
32″	32 1/16	32⅜	32 13/16	33 7/16	34	35
33″	33 1/16	33⅜	33 13/16	34¼	35	35 13/16
34″	34 1/16	34 5/16	34 11/16	35¼	35 15/16	36¾
35″	35 1/16	35 5/16	35 11/16	36 3/16	36⅞	37 11/16
36″	36 1/16	36 5/16	36 11/16	37 3/16	37 13/16	38⅝
37″	37 1/16	37 5/16	37⅝	38⅛	38¾	39½
38″	38 1/16	38¼	38⅝	39⅛	39¾	40½
39″	39 1/16	39¼	39⅝	40⅛	40 11/16	41 7/16
40″	40 1/16	40¼	40⅝	41 1/16	41⅝	42⅜
41″	41 1/16	41¼	41 9/16	42 1/16	42⅝	43 5/16
42″	42 1/16	42¼	42 9/16	43	43 9/16	44¼
43″	43 1/16	43¼	43½	44	44½	45¼
44″	44 1/16	44½	44½	44 15/16	45½	46⅛
45″	45 1/16	45¼	45½	45 15/16	46½	47⅛
46″	46 1/16	46¼	46½	46 15/16	47⅜	48 1/16
47″	47 1/16	47¼	47½	47⅞	48⅜	49
48″	48⅛	48 3/16	48½	48⅞	49⅜	50

SPAN	HEIGHT OF RISE					
	7″	8″	9″	10″	11″	12″
18″	24½	26 5/16	28¼	....	....	....
19″	25¼	27	28 13/16	....	....	....
20″	26	27 11/16	29½	31 7/16	....	....
21″	26¾	28 5/16	30	32	....	....
22″	27½	29	30¾	32 9/16	34 9/16	....
23″	28¼	29 13/16	31 7/16	33¼	35⅛	....
24″	29⅛	30 9/16	32 3/16	33⅞	35 13/16	37 11/16
25″	30	31⅜	32⅞	34⅝	36⅜	38¼
26″	30¾	32⅛	33⅝	35¼	37	38⅞
27″	31⅝	32 15/16	34⅜	36	37 11/16	39½
28″	32½	33¾	35⅛	36¾	38⅜	40⅛
29″	33 5/16	34½	35 15/16	37 7/16	39	40¾
30″	34 5/16	35⅜	36¾	38 5/16	39⅞	41½
31″	35	36 5/16	37½	39	40¾	42 5/16
32″	36	37⅛	38⅜	39¾	41 5/16	42⅞
33″	36 13/16	38	39⅛	40 9/16	42	43 9/16
34″	37¾	38 13/16	40 1/16	41⅜	42 13/16	44⅜
35″	38⅝	39 11/16	40⅞	42 3/16	43 9/16	45⅛
36″	39½	40 9/16	41⅝	43	44⅜	45 13/16
37″	40 7/16	41 7/16	42 9/16	43 13/16	45 3/16	46⅞
38″	41 5/16	42⅛	43½	44 11/16	46	47 7/16
39″	42¼	43¼	44⅜	45½	46 13/16	48¼
40″	43 3/16	44⅛	45 3/16	46⅜	47⅝	49
41″	44⅛	45 1/16	46⅛	47¼	48 7/16	49 13/16
42″	45 1/16	45 15/16	46 15/16	48 1/16	49 5/16	50⅝
43″	46	46⅞	47⅞	48 13/16	50 3/16	51 7/16
44″	46 15/16	47¾	48¾	49 13/16	51	52¼
45″	47 13/16	48 11/16	49⅝	50 11/16	51⅝	53⅛
46″	48¾	49 5/16	50½	51 9/16	52¾	54
47″	49¾	50½	51 7/16	52 7/16	53 9/16	54¾
48″	50⅝	51 9/16	52⅜	53⅜	54½	55⅝

See page 41 for Corrugated Sheets and Arches.

WEIGHT OF ROUND BARS

Size, Inches	Wt. per ft. lbs.	Wt. of 12′ bar	Wt. of 16′ bar	Wt. of 20′ bar
1/16	.010	0.120	0.16	0.200
5/64	.106	0.192	0.256	0.320
3/32	.024	0.288	0.384	0.480
7/64	.032	0.384	0.512	0.640
1/8	.042	0.504	0.672	0.840
9/64	.053	0.636	0.848	1.06
5/32	.065	0.780	1.04	1.30
11/64	.079	0.948	1.26	1.58
3/16	.094	1.13	1.50	1.88
13/64	.110	1.32	1.76	2.20
7/32	.128	1.54	2.05	2.56
15/64	.147	1.76	2.35	2.94
1/4	.167	2.00	2.67	3.34
17/64	.189	2.27	3.02	3.78
9/32	.211	2.53	3.38	4.22
19/64	.235	2.82	3.76	4.70
5/16	.261	3.13	4.18	5.22
21/64	.288	3.46	4.61	5.76
11/32	.316	3.79	5.06	6.32
23/64	.345	4.14	5.52	6.90
3/8	.376	4.51	6.02	7.52
25/64	.408	4.90	6.53	8.16
13/32	.441	5.29	7.06	8.82
27/64	.476	5.71	7.62	9.52
7/16	.511	6.13	8.18	10.22
29/64	.549	6.59	8.78	10.98
15/32	.587	7.04	9.39	11.74
31/64	.627	7.52	10.03	12.54
1/2	.668	8.02	10.69	13.36
33/64	.710	8.52	11.36	14.20
17/32	.754	9.05	12.06	15.08
35/64	.797	9.56	12.75	15.94
9/16	.845	10.14	13.52	16.90
37/64	.893	10.72	14.29	17.86
19/32	.942	11.30	15.07	18.84
39/64	.992	11.90	15.87	19.84
5/8	1.04	12.48	16.64	20.80
41/64	1.10	13.20	17.60	22.00
21/32	1.15	13.80	18.40	23.00
11/16	1.26	15.12	20.16	25.20
23/32	1.38	16.56	22.08	27.60
47/64	1.44	17.28	23.04	28.80
3/4	1.50	18.00	24.00	30.00
49/64	1.57	18.84	25.12	31.40
25/32	1.63	19.56	26.08	32.60
13/16	1.76	21.12	28.16	35.2
27/32	1.90	22.80	30.40	38.0
7/8	2.04	24.48	32.64	40.8
29/32	2.19	26.28	35.04	43.8
15/16	2.35	28.20	37.60	47.0
31/32	2.51	30.12	40.16	50.2
1	2.67	32.04	42.72	53.4
1 1/32	2.84	34.08	45.44	56.8
1 1/16	3.01	36.12	48.16	60.2
1 1/8	3.38	40.56	54.08	67.6
1 3/16	3.77	45.24	60.32	75.4
1 1/4	4.17	50.04	66.72	83.4
1 5/16	4.60	55.20	73.60	92.0
1 3/8	5.05	60.60	80.80	101.0
1 7/16	5.52	66.24	88.32	110.4
1 1/2	6.01	72.12	96.16	120.2
1 9/16	6.52	78.24	104.32	130.4
1 5/8	7.05	84.60	112.80	141.0
1 11/16	7.60	91.20	121.60	152.0
1 3/4	8.18	98.16	130.88	163.6
1 13/16	8.77	105.24	140.32	175.4
1 7/8	9.39	112.68	150.24	187.8
1 15/16	10.02	120.24	160.32	200.4
2	10.68	128.16	170.88	213.6
2 1/16	11.36	136.32	181.76	227.2
2 1/8	12.06	144.72	192.96	241.2
2 3/16	12.78	153.36	204.48	255.6
2 1/4	13.52	162.24	216.32	270.4
2 5/16	14.28	171.36	228.48	285.6
2 3/8	15.06	180.72	240.96	301.2
2 7/16	15.87	190.44	253.92	317.4
2 1/2	16.69	200.28	267.04	333.8
2 9/16	17.53	210.36	280.48	350.6
2 5/8	18.40	220.80	294.40	368.0
2 11/16	19.29	231.48	308.64	385.8
2 3/4	20.20	242.40	323.20	404.0
2 13/16	21.12	253.44	337.92	422.4
2 7/8	22.07	264.84	353.12	441.4
2 15/16	23.04	276.48	368.64	460.8
3	24.03	288.36	384.48	480.6
3 1/16	25.04	300.48	400.64	500.8
3 1/8	26.08	312.96	417.28	521.6
3 3/16	27.13	325.56	434.08	542.6
3 1/4	28.21	338.52	451.36	564.2
3 5/16	29.30	351.60	468.80	586.0
3 3/8	30.42	365.04	486.72	608.4
3 7/16	31.55	378.60	504.80	631.0
3 1/2	32.71	392.52	523.36	654.2
3 9/16	33.89	406.68	542.24	677.8
3 5/8	35.09	421.08	561.44	701.8
3 11/16	36.31	435.72	580.96	726.2
3 3/4	37.55	450.60	600.80	751.0
3 13/16	38.81	465.72	620.96	776.2
3 7/8	40.13	481.56	642.08	802.6
3 15/16	41.40	496.80	662.40	828.0
4	42.73	512.76	683.68	854.6
4 1/16	44.07	528.84	705.12	881.4
4 1/8	45.44	545.28	727.04	908.8
4 3/16	46.73	561.96	749.28	936.6
4 1/4	48.23	578.76	771.68	964.6
4 5/16	49.66	595.92	794.56	993.2
4 3/8	51.11	613.32	817.76	1022.2
4 7/16	52.58	630.96	841.28	1051.6
4 1/2	54.08	648.96	865.28	1081.6
4 9/16	55.59	667.08	889.44	1111.8
4 5/8	57.12	686.04	914.72	1143.4
4 11/16	58.68	704.16	938.88	1173.6
4 3/4	60.25	723.00	964.00	1205.0
4 7/8	63.52	762.24	1016.32	1270.4
4 15/16	65.10	781.20	1041.60	1302.0
5	66.76	801.12	1068.16	1335.2
5 1/8	70.14	841.68	1122.24	1402.8
5 1/4	73.60	883.20	1177.60	1472.0
5 5/16	75.36	904.32	1205.76	1507.2
5 7/16	78.95	947.40	1263.20	1579.0
5 1/2	80.78	969.36	1292.48	1615.6
5 3/4	88.30	1059.60	1412.80	1766.0
5 7/8	92.17	1106.04	1474.72	1843.4
5 15/16	94.14	1129.68	1506.24	1882.8
6	96.13	1153.56	1538.08	1922.6
6 1/4	104.31	1251.72	1668.96	2086.2
6 1/2	112.82	1353.84	1805.12	2256.4
6 3/4	121.78	1461.36	1948.48	2435.6
7	130.85	1570.20	2093.60	2617.0
7 1/2	150.21	1803.96	2405.28	3006.0
8	170.90	2050.80	2734.40	3418.0
9	216.30	2595.60	3460.80	4326.0
10	267.00	3204.00	4272.00	5340.0
10 1/2	294.40	3532.80	4710.40	5888.0
11	323.10	3877.20	5169.60	6462.0
11 1/2	353.10	4237.20	5649.60	7062.0
12	384.50	4614.00	6152.00	7690.0
12 1/16	390.00	4680.00	6240.00	7800.0

WEIGHT OF SQUARE BARS

Size, Inches	Wt. per ft. lbs.	Wt. of 12′ bar	Wt. of 16′ bar	Wt. of 20′ bar
1/8	.053	.64	.85	1.06
5/32	.083	1.00	1.33	1.66
3/16	.120	1.44	1.92	2.40
7/32	.163	1.96	2.61	3.26
1/4	.213	2.56	3.41	4.26
9/32	.269	3.23	4.30	5.38
5/16	.332	3.98	5.31	6.64
11/32	.402	4.82	6.43	8.04
3/8	.478	5.74	7.65	9.56
7/16	.651	7.81	10.42	13.02
1/2	.850	10.20	13.60	17.00
9/16	1.08	12.96	17.28	21.60
19/32	1.20	14.40	19.20	24.00
5/8	1.33	15.96	21.28	26.60
11/16	1.61	19.32	25.76	32.20
3/4	1.91	22.92	30.56	38.20
13/16	2.24	26.88	35.84	44.80
7/8	2.60	31.20	41.60	52.00
15/16	2.99	35.88	47.84	59.80
1	3.40	40.80	54.40	68.00
1 1/16	3.83	45.96	61.28	76.60
1 1/8	4.30	51.60	68.80	86.00
1 3/16	4.80	57.60	76.80	96.00
1 1/4	5.31	63.72	84.96	106.20
1 5/16	5.86	70.32	93.76	117.20
1 3/8	6.43	77.16	102.88	128.60
1 7/16	7.03	84.36	112.48	140.60
1 1/2	7.65	91.80	122.40	153.00
1 9/16	8.30	99.60	132.80	166.00
1 5/8	8.98	107.76	143.68	179.60
1 11/16	9.68	116.16	154.88	193.60
1 3/4	10.41	124.92	166.56	208.20
1 13/16	11.17	134.04	178.72	223.40
1 7/8	11.96	143.52	191.36	239.20
1 15/16	12.76	153.12	204.16	255.20
2	13.60	163.20	217.60	272.00
2 1/16	14.46	173.52	231.36	289.20
2 1/8	15.36	184.32	245.76	307.20
2 3/16	16.27	195.24	260.32	325.40
2 1/4	17.21	206.52	275.36	344.20
2 5/16	18.18	218.16	290.88	363.60
2 3/8	19.19	230.28	307.04	383.80
2 7/16	20.20	242.40	323.20	404.00
2 1/2	21.25	255.00	340.00	425.00
2 9/16	22.32	267.84	357.12	446.40
2 5/8	23.42	281.04	374.72	468.40
2 3/4	25.71	308.52	411.36	514.20
2 7/8	28.10	337.20	449.60	562.00
3	30.60	367.20	489.60	612.00
3 1/8	33.20	398.40	531.20	664.00
3 1/4	35.91	431.28	575.04	718.80
3 3/8	38.70	464.40	619.20	774.00
3 1/2	41.65	499.80	666.40	833.00
3 3/4	47.80	573.60	764.80	956.00
4	54.40	652.80	870.40	1088.00
4 1/2	68.85	837.72	1116.96	1396.20
5	85.00	1020.00	1360.00	17.0000
6	122.40	1468.80	1958.40	2448.00

WEIGHT OF HEXAGON BARS

Size, Inches	Wt. per ft. lbs.	Wt. of 12′ bar	Wt. of 16′ bar	Wt. of 20′ bar
1/8	.046	.55	.74	.92
5/32	.072	.86	1.15	1.44
3/16	.104	1.25	1.66	2.08
7/32	.141	1.69	2.26	2.82
1/4	.184	2.21	2.94	3.68
9/32	.233	2.80	3.73	4.66
5/16	.288	3.46	4.61	5.76
11/32	.348	4.18	5.57	6.96
3/8	.414	4.97	6.62	8.28
7/16	.564	6.77	9.02	11.28
1/2	.737	8.84	11.79	14.74
9/16	.932	11.18	14.91	18.64
5/8	1.150	13.80	18.40	23.00
11/16	1.393	16.72	22.29	27.86
3/4	1.658	19.90	26.53	33.16
13/16	1.944	23.33	31.10	38.88
7/8	2.256	27.07	36.10	45.12
15/16	2.588	31.06	41.41	51.76
1	2.944	35.33	47.10	58.88
1 1/16	3.324	39.89	53.18	66.48
1 1/8	3.727	44.72	59.63	74.54
1 3/16	4.152	49.82	66.42	83.04
1 1/4	4.601	55.21	73.62	92.02
1 5/16	5.072	60.86	81.15	101.44
1 3/8	5.567	66.80	89.07	111.34
1 7/16	6.085	73.02	97.36	121.70
1 1/2	6.625	79.50	106.00	132.50
1 9/16	7.189	86.27	115.02	143.78
1 5/8	7.775	93.30	124.40	155.50
1 11/16	8.385	100.62	134.16	167.70
1 3/4	9.018	108.22	144.29	180.36
1 13/16	9.673	116.08	154.77	193.46
1 7/8	10.355	124.26	165.68	207.10
1 15/16	11.053	132.64	176.85	221.06
2	11.780	141.36	188.48	235.60
2 1/16	12.528	150.34	200.45	250.56
2 1/8	13.300	159.60	212.80	266.00
2 3/16	14.092	169.10	225.47	281.84
2 1/4	14.911	178.93	238.58	298.22
2 5/16	15.747	188.96	251.95	314.94
2 3/8	16.613	199.36	265.81	332.26
2 7/16	17.496	209.95	279.94	349.92
2 1/2	18.403	220.84	294.45	368.06
2 9/16	19.337	232.04	309.39	386.74
2 5/8	20.294	242.69	323.58	404.48
2 3/4	22.273	267.28	356.37	445.46
2 7/8	24.343	292.12	389.49	486.86
3	26.500	318.00	424.00	530.00
3 1/8	28.755	345.06	460.08	575.10
3 1/4	31.101	373.21	497.62	622.02
3 3/8	33.540	402.48	536.64	670.80
3 1/2	36.070	432.84	577.12	721.40
3 3/4	41.407	496.88	662.51	828.14
4	47.112	565.34	753.79	942.24
4 1/2	59.636	715.63	954.18	1192.72

WEIGHT OF FLAT BARS

Size Inches	Wt. per ft. lbs.	Wt. of 12′ bar	Wt. of 16′ bar	Wt. of 20′ bar
No. 12				
⅜	0.139	1.67	2.22	2.78
½	0.185	2.22	2.96	3.70
⅝	0.232	2.78	3.71	4.64
¾	0.278	3.34	4.45	5.56
⅞	0.324	3.89	5.18	6.48
1	0.371	4.45	5.94	7.42
1⅛	0.417	5.00	6.67	8.34
1¼	0.463	5.56	7.41	9.26
1⅜	0.510	6.12	8.16	10.20
1½	0.556	6.67	8.90	11.12
1¾	0.649	7.79	10.38	12.98
2	0.741	8.89	11.86	14.82
2¼	0.834	10.01	13.34	16.68
2½	0.927	11.12	14.83	18.54
2¾	1.019	12.23	16.30	20.38
3	1.112	13.34	17.79	22.24
3½	1.297	15.56	20.75	25.94
4	1.482	17.78	23.71	29.64
⅛ x				
3/16	0.080	.96	1.28	1.60
¼	0.106	1.27	1.70	2.12
5/16	0.133	1.60	2.13	2.66
⅜	0.159	1.91	2.54	3.18
½	0.213	2.56	3.41	4.26
⅝	0.266	3.19	4.26	5.32
¾	0.319	3.83	5.10	6.38
⅞	0.372	4.46	5.95	7.44
1	0.425	5.10	6.80	8.50
1⅛	0.477	5.72	7.63	9.54
1¼	0.531	6.37	8.50	10.62
1⅜	0.584	7.01	9.34	11.68
1½	0.638	7.66	10.21	12.76
1⅝	0.691	8.29	11.06	13.82
1¾	0.744	8.93	11.90	14.88
2	0.850	10.20	13.60	17.00
2¼	0.956	11.47	15.30	19.12
2½	1.063	12.76	17.01	21.26
2¾	1.169	14.03	18.70	23.38
3	1.275	15.30	20.40	25.50
3¼	1.381	16.57	22.10	27.62
3½	1.488	17.86	23.81	29.76
3¾	1.594	19.13	25.50	31.88
4	1.700	20.40	27.20	34.00
4½	1.913	22.96	30.61	38.26
5	2.125	25.50	34.00	42.50
5½	2.338	28.06	37.41	46.76
6	2.550	30.60	40.80	51.00
7	2.975	35.70	47.60	59.50
8	3.400	40.80	54.40	68.00
9	3.825	45.90	61.20	76.50
10	4.250	51.00	68.00	85.00
12	5.100	61.20	81.60	102.00
No. 10x				
⅜	0.171	2.05	2.74	3.42
½	0.228	2.74	3.65	4.56
⅝	0.285	3.42	4.56	5.70
¾	0.342	4.10	5.47	6.84
⅞	0.399	4.79	6.38	7.98
1	0.456	5.47	7.30	9.12
1⅛	0.513	6.16	8.21	10.26
1¼	0.570	6.84	9.12	11.40
1⅜	0.627	7.52	10.03	12.54

Size, Inches	Wt. per ft. lbs.	Wt. of 12′ bar	Wt. of 16′ bar	Wt. of 20′ bar
No. 10x				
1½	0.683	8.20	10.93	13.66
1¾	0.797	9.56	12.75	15.94
2	0.911	10.93	14.58	18.22
2¼	1.025	12.30	16.40	20.50
2½	1.139	13.67	18.22	22.78
2¾	1.253	15.04	20.05	25.06
3	1.367	16.40	21.87	27.34
3¼	1.481	17.77	23.70	29.62
3½	1.595	19.14	25.52	31.90
4	1.822	21.86	29.15	36.44
4½	2.050	24.60	32.80	41.00
5	2.278	27.34	36.45	45.56
5½	2.506	30.07	40.10	50.12
6	2.734	32.81	43.74	54.68
7	3.189	38.27	51.02	63.78
8	3.645	43.74	58.32	72.90
9	4.100	49.20	65.60	82.00
5/32 x				
¼	0.133	1.60	2.13	2.66
5/16	0.166	1.99	2.66	3.32
⅜	0.199	2.39	3.18	3.98
3/16 x				
¼	.160	1.92	2.56	3.20
5/16	.199	2.39	3.18	3.98
⅜	.239	2.87	3.82	4.78
7/16	.279	3.35	4.46	5.58
½	.319	3.83	5.10	6.38
9/16	.359	4.31	5.74	7.18
⅝	.398	4.78	6.37	7.96
¾	.478	5.74	7.65	9.56
⅞	.558	6.70	8.93	11.16
1	.638	7.66	10.21	12.76
1⅛	.717	8.60	11.47	14.34
1¼	.797	9.56	12.75	15.94
1⅜	.877	10.52	14.03	17.54
1½	.956	11.47	15.30	19.12
1¾	1.116	13.39	17.86	22.32
1⅞	1.195	14.34	19.12	23.90
2	1.275	15.30	20.40	25.50
2¼	1.434	17.21	22.94	28.68
2½	1.594	19.13	25.50	31.88
2¾	1.753	21.04	28.05	35.06
3	1.913	22.96	30.61	38.26
3¼	2.072	24.86	33.15	41.44
3½	2.231	26.77	35.70	44.62
3¾	2.391	28.69	38.26	47.82
4	2.550	30.60	40.80	51.00
4½	2.868	34.42	45.89	57.36
5	3.188	38.26	51.01	63.76
6	3.825	45.90	61.20	76.50
¼ x				
5/16	.266	3.19	4.26	5.32
⅜	.319	3.83	5.10	6.38
7/16	.372	4.46	5.95	7.44
½	.425	5.10	6.80	8.50
9/16	.478	5.74	7.65	9.56
⅝	.531	6.37	8.50	10.62
11/16	.584	7.01	9.34	11.68
¾	.638	7.66	10.21	12.76
13/16	.691	8.29	11.06	13.82
⅞	.744	8.93	11.90	14.88

(Continued)

WEIGHT OF FLAT BARS

Size, Inches	Wt. per ft. lbs.	Wt. of 12′ bar	Wt. of 16′ bar	Wt. of 20′ bar
¼ x				
15/16	.797	9.56	12.75	15.94
1	.850	10.20	13.60	17.00
1⅛	.956	11.47	15.30	19.12
1¼	1.063	12.76	17.01	21.26
1⅜	1.169	14.03	18.70	23.38
1½	1.275	15.30	20.40	25.50
1⅝	1.381	16.57	22.10	27.62
1¾	1.488	17.86	23.81	29.76
1⅞	1.594	19.13	25.50	31.88
2	1.700	20.40	27.20	34.00
2¼	1.913	22.96	30.61	38.26
2½	2.125	25.50	34.00	42.50
2¾	2.338	28.06	37.41	46.76
3	2.550	30.60	40.80	51.00
3¼	2.760	33.12	44.16	55.20
3½	2.975	35.70	47.60	59.50
3¾	3.190	38.28	51.04	63.80
4	3.400	40.80	54.40	68.00
4¼	3.613	43.36	57.81	72.26
4½	3.825	45.90	61.20	76.50
5	4.250	51.00	68.00	85.00
5½	4.675	56.10	74.80	93.50
6	5.100	61.20	81.60	102.00
8	6.800	81.60	108.80	136.00
10	8.500	102.00	136.00	170.00
12	10.200	122.40	163.20	204.00
5/16 x				
⅜	.398	4.78	6.37	7.96
7/16	.464	5.57	7.42	9.28
½	.531	6.37	8.50	10.62
9/16	.598	7.18	9.57	11.96
⅝	.664	7.97	10.62	13.28
11/16	.731	8.77	11.70	14.62
¾	.797	9.56	12.75	15.94
⅞	.930	11.16	14.88	18.60
1	1.063	12.76	17.01	21.26
1⅛	1.195	14.34	19.12	23.90
1¼	1.328	15.94	21.25	26.56
1⅜	1.461	17.53	23.38	29.22
1½	1.594	19.13	25.50	31.88
1¾	1.859	22.31	29.74	37.18
2	2.125	25.50	34.00	42.50
2⅛	2.258	27.10	36.13	45.16
2¼	2.391	28.69	38.26	47.82
2½	2.656	31.87	42.50	53.12
2¾	2.922	35.06	46.75	58.44
3	3.188	38.26	51.01	63.76
3¼	3.453	41.44	55.25	69.06
3½	3.719	44.63	59.50	74.38
4	4.250	51.00	69.00	85.00
4½	4.781	57.37	76.50	95.62
5	5.313	63.76	85.01	106.26
6	6.375	76.50	102.00	127.50
8	8.500	102.00	136.00	170.00
10	10.625	127.50	170.00	212.50
12	12.750	153.00	204.00	255.00
⅜ x				
7/16	.558	6.70	8.93	11.16
½	.638	7.66	10.21	12.76
9/16	.717	8.60	11.47	14.34
⅝	.797	9.56	12.75	15.94
11/16	.877	10.52	14.03	17.54
¾	.956	11.47	15.30	19.12
⅞	1.116	13.39	17.86	22.32
1	1.275	15.30	20.40	25.50
1⅛	1.434	17.21	22.94	28.68
1¼	1.594	19.13	25.50	31.88
1⅜	1.753	21.04	28.05	35.06
1½	1.913	22.96	30.61	38.26
1⅝	2.072	24.96	33.15	41.44
1¾	2.231	26.77	35.70	44.62
1⅞	2.391	28.69	38.26	47.82
2	2.550	30.60	40.80	51.00
2¼	2.869	34.43	45.90	57.38
2½	3.188	38.26	51.01	63.76
2¾	3.506	42.07	56.10	70.12
3	3.825	45.90	61.20	76.50
3¼	4.144	49.73	66.30	82.88
3½	4.463	53.56	71.41	89.26
3¾	4.781	57.37	76.50	95.62
4	5.100	61.20	81.60	102.00
4¼	5.419	65.03	86.70	108.38
4½	5.738	68.86	91.81	114.76
5	6.375	76.50	102.00	127.50
5½	7.013	84.16	112.21	140.26
6	7.650	91.80	122.40	153.00
8	10.200	122.40	163.20	204.00
10	12.750	153.00	204.00	255.00
12	15.300	183.60	244.80	306.00
7/16 x				
½	.744	8.93	11.90	14.88
9/16	.837	10.04	13.39	16.74
⅝	.930	11.16	14.88	18.60
¾	1.116	13.39	17.86	22.32
⅞	1.301	15.61	20.82	26.02
1	1.488	17.86	23.81	29.76
1⅛	1.673	20.08	26.77	33.46
1¼	1.859	22.31	29.74	37.18
1½	2.231	26.77	35.70	44.62
1¾	2.603	31.24	41.65	52.06
2	2.975	35.70	47.60	59.50
2¼	3.347	40.16	53.55	66.94
2½	3.719	44.63	59.50	74.38
2¾	4.091	49.09	65.46	81.82
3	4.463	53.56	71.41	89.26
3¼	4.830	57.96	77.28	96.60
3½	5.210	62.52	83.36	104.20
4	5.950	71.40	95.20	119.00
4½	6.694	80.33	107.10	133.88
5	7.438	89.26	119.01	148.76
6	8.925	107.10	142.80	178.50
½ x				
9/16	.956	11.47	15.30	19.12
⅝	1.063	12.76	17.01	21.26
11/16	1.169	14.03	18.70	23.38
¾	1.275	15.30	20.40	25.50
13/16	1.382	16.58	22.11	27.64
⅞	1.488	17.86	23.81	29.76
1	1.700	20.40	27.20	34.00
1⅛	1.913	22.96	30.61	38.26
1¼	2.125	25.50	34.00	42.50
1⅜	2.338	28.06	37.41	46.76
1½	2.550	30.60	40.80	51.00
1⅝	2.763	33.16	44.21	55.26

(Continued)

WEIGHT OF FLAT BARS

Size, Inches	Wt. per ft. lbs.	Wt. of 12′ bar	Wt. of 16′ bar	Wt. of 20′ bar
½ x				
1¾	2.975	35.70	47.60	59.50
1⅞	3.188	38.26	51.01	63.76
2	3.400	40.80	54.40	68.00
2¼	3.825	45.90	61.20	76.50
2½	4.250	51.00	68.00	85.00
2¾	4.675	56.10	74.80	93.50
3	5.100	61.20	81.60	102.00
3¼	5.525	66.30	88.40	110.50
3½	5.950	71.40	95.20	119.00
3¾	6.375	76.50	102.00	127.50
4	6.800	81.60	108.80	136.00
4¼	7.225	86.70	115.60	144.50
4½	7.650	91.80	122.40	153.00
4¾	8.075	96.90	129.20	161.50
5	8.500	102.00	136.00	170.00
5¼	8.925	107.10	142.80	178.50
5½	9.350	112.20	149.60	187.00
5¾	9.775	117.30	156.40	195.50
6	10.200	122.40	163.20	204.00
8	13.600	163.20	217.60	272.00
10	17.000	204.00	272.00	340.00
12	20.400	244.80	326.40	408.00
9/16 x				
⅝	1.200	14.40	19.20	24.00
¾	1.434	17.21	22.94	28.68
⅞	1.673	20.08	26.77	33.46
1	1.913	22.96	30.61	38.26
1¼	2.391	28.69	38.26	47.82
1½	2.869	34.43	45.90	57.38
1¾	3.347	40.16	53.55	66.94
2	3.825	45.90	61.20	76.50
2½	4.781	57.37	76.50	95.62
3	5.738	68.86	91.81	114.76
⅝ x				
11/16	1.461	17.53	23.38	29.22
¾	1.594	19.13	25.50	31.88
13/16	1.727	20.72	27.63	34.54
⅞	1.859	22.31	29.74	37.18
1	2.125	25.50	34.00	42.50
1⅛	2.391	28.69	38.26	47.82
1¼	2.656	31.87	42.50	53.12
1⅜	2.922	35.06	46.75	58.44
1½	3.188	38.26	51.01	63.76
1⅝	3.453	41.44	55.25	69.06
1¾	3.719	44.63	59.50	74.38
1⅞	3.984	47.81	63.74	79.68
2	4.250	51.00	68.00	85.00
2¼	4.781	57.37	76.50	95.62
2½	5.313	63.76	85.01	106.26
2¾	5.844	70.13	93.50	116.88
3	6.375	76.50	102.00	127.50
3¼	6.906	82.87	110.50	138.12
3½	7.438	89.26	119.01	148.76
3¾	7.969	95.63	127.50	159.38
4	8.500	102.00	136.00	170.00
4¼	9.031	108.37	144.50	180.62
4½	9.563	114.76	153.01	191.26
4¾	10.094	121.13	161.50	201.88
5	10.625	127.50	170.00	212.50
5½	11.688	140.26	187.01	233.76
6	12.750	153.00	204.00	255.00
⅝ x				
7	14.875	178.50	238.00	297.50
8	17.000	204.00	272.00	340.00
10	21.250	255.00	340.00	425.00
12	25.500	306.00	408.00	510.00
11/16 x				
¾	1.753	21.04	28.05	35.06
⅞	2.050	24.60	32.80	41.00
1	2.337	28.04	37.39	46.74
1⅛	2.630	31.56	42.08	52.60
1¼	2.922	35.06	46.75	58.44
1½	3.506	42.07	56.10	70.12
1¾	4.090	49.08	65.44	81.80
2	4.675	56.10	74.80	93.50
¾ x				
13/16	2.072	24.86	33.15	41.44
⅞	2.231	26.77	35.70	44.62
1	2.550	30.60	40.80	51.00
1⅛	2.869	34.43	45.90	57.38
1¼	3.188	38.26	51.01	63.76
1⅜	3.506	42.07	56.10	70.12
1½	3.825	45.90	61.20	76.50
1⅝	4.144	49.73	66.30	82.88
1¾	4.463	53.56	71.41	89.26
2	5.100	61.20	81.60	102.00
2¼	5.738	68.86	91.81	114.76
2½	6.375	76.50	102.00	127.50
2¾	7.013	84.16	112.21	140.26
3	7.650	91.80	122.40	153.00
3¼	8.288	99.46	132.61	165.76
3½	8.925	107.10	142.80	178.50
4	10.200	122.40	163.20	204.00
4½	11.475	137.70	183.60	229.50
5	12.750	153.00	204.00	255.00
5½	14.025	168.30	224.40	280.50
6	15.300	183.60	244.80	306.00
8	20.400	244.80	326.40	408.00
10	25.000	300.00	400.00	500.00
12	30.600	367.20	489.60	612.00
⅞ x				
1	2.975	35.70	47.60	59.50
1⅛	3.347	40.16	53.55	66.94
1¼	3.719	44.63	59.50	74.38
1⅜	4.091	49.09	65.46	81.82
1½	4.463	53.56	71.41	89.26
1¾	5.206	62.47	83.30	104.12
2	5.950	71.40	95.20	119.00
2¼	6.690	80.28	107.04	133.80
2½	7.438	89.26	119.01	148.76
2¾	8.180	98.16	130.88	163.60
3	8.925	107.10	142.80	178.50
3¼	9.669	116.03	154.70	193.38
3½	10.413	124.96	166.61	208.26
4	11.900	142.80	190.40	238.00
4½	13.388	160.66	214.21	267.76
5	14.875	178.50	238.00	297.50
6	17.850	214.20	285.60	357.00
8	23.800	285.60	380.80	476.00
10	29.750	357.00	476.00	595.00
12	35.700	428.40	571.20	714.00

(Continued)

WEIGHT OF FLAT BARS

(Concluded)

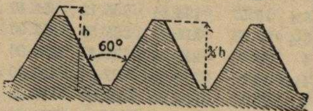
Size, Inches	Wt. per ft. lbs.	Wt. of 12′ bar	Wt. of 16′ bar	Wt. of 20′ bar
1 x				
1⅛	3.825	45.90	61.20	76.50
1¼	4.250	51.00	68.00	85.00
1⅜	4.675	56.10	74.80	93.50
1½	5.100	61.20	81.60	102.00
1⅝	5.525	66.30	88.40	110.50
1¾	5.950	71.40	95.20	119.00
2	6.800	81.60	108.80	136.00
2¼	7.650	91.80	122.40	153.00
2½	8.500	102.00	136.00	170.00
2¾	9.350	112.20	149.60	187.00
3	10.200	122.40	163.20	204.00
3¼	11.050	132.60	176.80	221.00
3½	11.900	142.80	190.40	238.00
3¾	12.750	153.00	204.00	255.00
4	13.000	163.20	217.60	272.00
4½	15.300	183.60	244.80	306.00
5	17.000	204.00	272.00	340.00
5½	18.700	224.40	299.20	374.00
6	20.400	244.80	326.40	408.00
8	27.200	326.40	435.20	544.00
10	34.000	408.00	544.00	680.00
12	40.800	489.60	652.80	816.00
1⅛ x				
1¼	4.781	57.37	76.50	95.62
1⅜	5.259	63.11	84.14	105.18
1½	5.738	68.86	91.81	114.76
1⅝	6.216	74.59	99.46	124.32
1¾	6.694	80.33	107.10	133.88
2	7.650	91.80	122.40	153.00
2¼	8.606	103.27	137.70	172.12
2½	9.562	114.74	152.99	191.24
3	11.476	137.71	183.62	229.52
4	15.300	183.60	244.80	306.00
1¼ x				
1⅜	5.844	70.13	93.50	116.88
1½	6.375	76.50	102.00	127.50
1⅝	6.906	82.87	110.50	138.12
1¾	7.438	89.26	119.01	148.76
1⅞	7.969	95.63	127.50	159.38
2	8.500	102.00	136.00	170.00
2¼	9.563	114.76	153.01	191.26
2½	10.625	127.50	170.00	212.50
2¾	11.688	140.26	187.01	223.76
3	12.750	153.00	204.00	255.00
3¼	13.813	165.76	221.01	276.26
3½	14.875	178.50	238.00	297.50
4	17.000	204.00	272.00	340.00
4½	19.125	229.50	306.00	382.50
5	21.250	255.00	340.00	425.00
5½	23.370	280.44	373.92	467.40
6	25.500	306.00	408.00	510.00
8	34.000	408.00	544.00	680.00
10	42.500	510.00	680.00	850.00
12	51.000	612.00	816.00	1020.00
1⅜ x				
2	9.35	112.20	149.60	187.00
3	14.02	168.24	224.32	280.40
1½ x				
1⅝	8.28	99.36	132.48	165.60
1¾	8.92	107.04	144.72	178.40
2	10.20	122.40	163.20	204.00
2¼	11.47	137.64	183.52	229.40
2½	12.75	153.00	204.00	255.00
2¾	14.02	168.24	224.32	280.40

Size, Inches	Wt. per ft. lbs.	Wt. of 12′ bar	Wt. of 16′ bar	Wt. of 0′ bar
1½ x				
3	15.30	183.60	244.80	306.00
3¼	16.57	198.84	265.12	331.40
3½	17.85	214.20	285.60	357.00
4	20.40	244.80	326.40	408.00
4½	22.95	275.40	367.20	459.00
5	25.50	306.00	408.00	510.00
5½	28.05	336.60	448.80	561.00
6	30.60	367.20	489.60	612.00
8	40.80	489.60	652.80	816.00
10	51.00	612.00	816.00	1020.00
12	61.20	734.40	979.20	1224.00
1¾ x				
2	11.90	142.80	190.40	238.00
2¼	13.39	160.68	214.24	267.80
2½	14.87	178.44	237.92	297.40
2¾	16.36	196.32	261.76	327.20
3	17.85	214.20	285.60	357.00
3¼	19.33	231.96	309.28	386.60
3½	20.82	249.84	333.12	416.40
4	23.80	285.60	380.80	476.00
4½	26.77	321.24	428.32	535.40
5	29.75	357.00	476.00	595.00
5½	32.72	392.64	523.52	654.40
6	35.70	428.40	571.20	714.00
2 x				
2¼	15.30	183.60	244.80	306.00
2½	17.00	204.00	272.00	340.00
2¾	18.70	224.40	199.20	374.00
3	20.40	244.80	326.40	408.00
3¼	22.10	265.20	353.60	442.00
3½	23.80	285.60	380.80	476.00
4	27.20	326.40	435.20	544.00
4½	30.60	367.20	489.60	612.00
5	34.00	408.00	544.00	680.00
6	40.80	489.60	652.80	816.00
8	54.40	652.80	870.40	1088.00
10	68.00	816.00	1088.00	1360.00
12	81.60	979.20	1305.60	1632.00
2¼ x				
2½	19.13	229.56	306.08	382.60
2¾	21.03	252.36	336.48	420.60
3	22.96	275.52	367.36	459.20
3¼	24.86	298.32	397.76	497.20
3½	26.77	321.24	428.32	535.40
4	30.60	367.20	489.60	612.00
4½	34.42	413.04	550.72	688.40
5	38.25	459.00	612.00	765.00
6	45.90	550.80	734.40	918.60
2½ x				
2¾	23.38	280.56	374.08	467.60
3	25.50	306.00	408.00	510.00
3¼	27.62	331.44	441.92	552.40
3½	29.75	357.00	476.00	595.00
4	34.00	408.00	544.00	680.00
4½	38.25	459.00	612.00	765.00
5	42.50	510.00	680.00	850.00
6	51.00	612.00	816.00	1020.00
3 x				
4	40.80	489.60	652.80	816.00
5	51.00	612.00	816.00	1020.00
6	61.20	734.40	979.20	1224.00
4 x				
6	81.60	979.20	1305.60	1632.00

STANDARD SCREW THREADS NUTS AND BOLT HEADS

AMERICAN NATIONAL STANDARD COURSE

SCREW THREADS



Angle of Thread 60°
h= .866P.
Flat at Top and Bottom
=⅛×Pitch.

Dia. of Bolt, Inches	N.C. Threads per Inch, No.	Tap Drill to Produce App. 75% Full N.C. Thread, Inches
¼	20	.2010
5/16	18	.2570
⅜	16	5/16
7/16	14	.3680
½	13	27/64
9/16	12	31/64
⅝	11	17/32
¾	10	21/32
⅞	9	49/64
1	8	⅞
1⅛	7	63/64
1¼	7	1 7/64
1⅜	6	1 7/32
1½	6	1 11/32
1⅝	5½	1 29/64
1¾	5	1 9/16
1⅞	5	1 11/16
2	4½	1 25/32
2¼	4½	2 1/32
2½	4	2 ¼
2¾	4	2 ½
3	4	2 ¾
3¼	4	3
3¼	4	3 ¼
3¾	4	3 ½
4	4	3 ¾

Customer should specify the number of threads required for diameters above 4″.

Approximate dimensions of both square and hexagon nut and bolt heads can be determined by the following rules.

Width across flats of unfinished heavy nuts
=1½×dia. of bolt +⅛ in.

Width across flats of regular unfinished nuts
=1½×dia. of bolt+1/16 in.

Thickness of unfinished heavy nuts
=dia. of bolt.

Thickness of regular unfinished nuts
=⅞×dia. of bolt.

Width across flats of regular unfinished head
=1½×dia. of bolt.

Thickness of regular unfinished head
=⅔×dia. of bolt.

Width across corners of a hexagon nut may be obtained by multiplying the width across flats by 1.155 and the width across corners of a square nut by multiplying the width across flats by 1.414.

For FREE CUTTING and

THREADING STEELS

see pages 56 to 59 Hot Rolled

and pages 76 to 82 Cold Finished

STANDARD GAGES

No. of Gage or Thickness of Sheet	Approximate Thickness in Inches						Wt. per Square Foot in Lbs.		
	U. S. Standard adopted by U. S. Gov't July 1, 1893 (Revised)			Stub's or Birmingham Wire Gage	American or Brown & Sharpe's Standard	W. & M. & A. S. & W. Gage	U. S. Standard Steel	Birmingham Wire Gage Steel	American or Brown & Sharpe's Steel
	Fractions	Inch Equivalent for Steel Sheet Thickness*	Inch Equivalent Thickness based on .2833 lb. per cu. in.	Decimals	Decimals	Decimals			
3	5/16" thick, over 48" wide, and ¼" and thicker over 6" are classed as Plates.			.259	.229	.2437	....	10.57	9.36
4				.238	.204	.2253	....	9.71	8.34
5				.22	.181	.2070	....	8.98	7.42
6				.203	.162	.1920	....	8.28	6.61
7	3-16	.1793	.1838	.18	.144	.1770	7.5	7.34	5.89
8	11-64	.1644	.1685	.165	.128	.1620	6.875	6.73	5.24
9	5-32	.1495	.1532	.148	.114	.1483	6.25	6.04	4.67
10	9-64	.1345	.1379	.134	.101	.1350	5.625	5.47	4.16
11	1-8	.1196	.1225	.12	.09	.1205	5.	4.90	3.70
12	7-64	.1046	.1072	.109	.08	.1055	4.375	4.50	3.30
13	3-32	.0897	.0919	.095	.072	.0915	3.75	3.88	2.94
14	5-64	.0747	.0766	.083	.064	.0800	3.125	3.39	2.62
15	9-128	.0673	.0689	.072	.057	.0720	2 8125	2.94	2.33
16	1-16	.0598	.0613	.065	.05	.0625	2.5	2.65	2.07
17	9-160	.0538	.0551	.058	.045	.0540	2.25	2.37	1.85
18	1-20	.0478	.0490	.049	.04	.0475	2.	2.00	1.64
19	7-160	.0418	.0429	.042	.035	.0410	1.75	1.71	1.46
20	3-80	.0359	.0368	.035	.032	.0348	1.50	1.43	1.31
21	11-320	.0329	.0337	.032	.028	.0317	1.375	1.31	1.16
22	1-32	.0299	.0306	.028	.025	.0286	1.25	1.14	1.03
23	9-320	.0269	.0276	.025	.022	.0258	1.125	1.02	.922
24	1-40	.0239	.0245	.022	.020	.0230	1.	.90	.82
25	7-320	.0209	.0214	.02	.017	.0204	.875	.82	.73
26	3-160	.0179	.0184	.018	.015	.0181	.75	.73	.649
27	11-640	.0164	.0169	.016	.014	.0173	.6875	.65	.579
28	1-64	.0149	.0153	.014	.012	.0162	.625	.57	.514
29	9-640	.0135	.0138	.013	.011	.0150	.5625	.53	.461
30	1-80	.0120	.0123	.012	.01	.0140	.5	.49	.408

*Manufacturers Standard Practice.

The United States Standard Gage is a weight gage based upon the weights per square foot, in ounces avoirdupois and approximately equivalent thicknesses based upon 41.82 pounds per square foot per inch thick for sheets.

All steel sheets in our stock are rolled to the U. S. Standard Gage.

Stub's or Birmingham Gage is used for Hot and Cold Rolled Strip Steel, Spring Steel, Flat wire, Boiler Tubes, Brass, Copper and Stainless Tubing.

American or Brown & Sharpe Gage is used for Copper and Brass sheets and Bars.

Washburn & Moen or American Steel & Wire Gage is used for Round Wire.

FRACTION AND DECIMAL CHART

Fraction	Decimal	Fraction	Decimal
1/64	.015625	33/64	.515625
1/32	.03125	17/32	.53125
3/64	.046875	35/64	.546875
1/16	.0625	9/16	.5625
5/64	.078125	37/64	.578125
3/32	.09375	19/32	.59375
7/64	.109375	39/64	.609375
1/8	.125	5/8	.625
9/64	.140625	41/64	.640625
5/32	.15625	21/32	.65625
11/64	.171875	43/64	.671875
3/16	.1875	11/16	.6875
13/64	.203125	45/64	.703125
7/32	.21875	23/32	.71875
15/64	.234375	47/64	.734375
1/4	.250	3/4	.750
17/64	.265625	49/64	.765625
9/32	.28125	25/32	.78125
19/64	.296875	51/64	.796875
5/16	.3125	13/16	.8125
21/64	.328125	53/64	.828125
11/32	.34375	27/32	.84375
23/64	.359375	55/64	.859375
3/8	.375	7/8	.875
25/64	.390625	57/64	.890625
13/32	.40625	29/32	.90625
27/64	.421875	59/64	.921875
7/16	.4375	15/16	.9375
29/64	.453125	61/64	.953125
15/32	.46875	31/32	.96875
31/64	.484375	63/64	.984375
1/2	.500	1	1.000

STEEL PLATES

Theoretical Weight per Square Foot in pounds

Inches	Weight	Inches	Weight	Inches	Weight
3/16	7.65	1 1/4	51.00	3 3/4	153.00
1/4	10.20	1 3/8	56.10	4	163.20
5/16	12.75	1 1/2	61.20	4 1/4	173.40
3/8	15.30	1 5/8	66.30	4 1/2	183.60
7/16	17.85	1 3/4	71.40	5	204.00
1/2	20.40	1 7/8	76.50	5 1/2	224.40
9/16	22.95	2	81.60	6	244.80
5/8	25.50	2 1/8	86.70	6 1/2	265.20
11/16	28.05	2 1/4	91.80	7	285.60
3/4	30.60	2 1/2	102.00	7 1/2	306.00
13/16	33.15	2 3/4	112.20	8	326.40
7/8	35.70	3	122.40	9	367.20
1	40.80	3 1/4	132.60	10	408.00
1 1/8	45.90	3 1/2	142.80		

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